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Service Area – IC wants our service area to be large, wants less private wells in aquifer. Give us potential revenue. However, we need to be able to provide service is a reasonable amount of time (120 days) for a reasonable cost.

Process – IC is supposed to send new customers over to us to determine if water is available. Does not always happen. We have lost some important opportunities.

Two different problems – treatment capability and contamination, but they effect each other. In town wells kick on in summer to fill up reservoir. Turning on more and more often. No treatment. Want to get away from using these wells. Want to keep them for fire protection only.

Ft. Casey wells -

108 – can pump 250 gpm. We are running it at 130-150 gpm now.

1-06 and 1090 – 100 gpm now

487 and 287 - 70 gpm combined. 487 on. 287 off.

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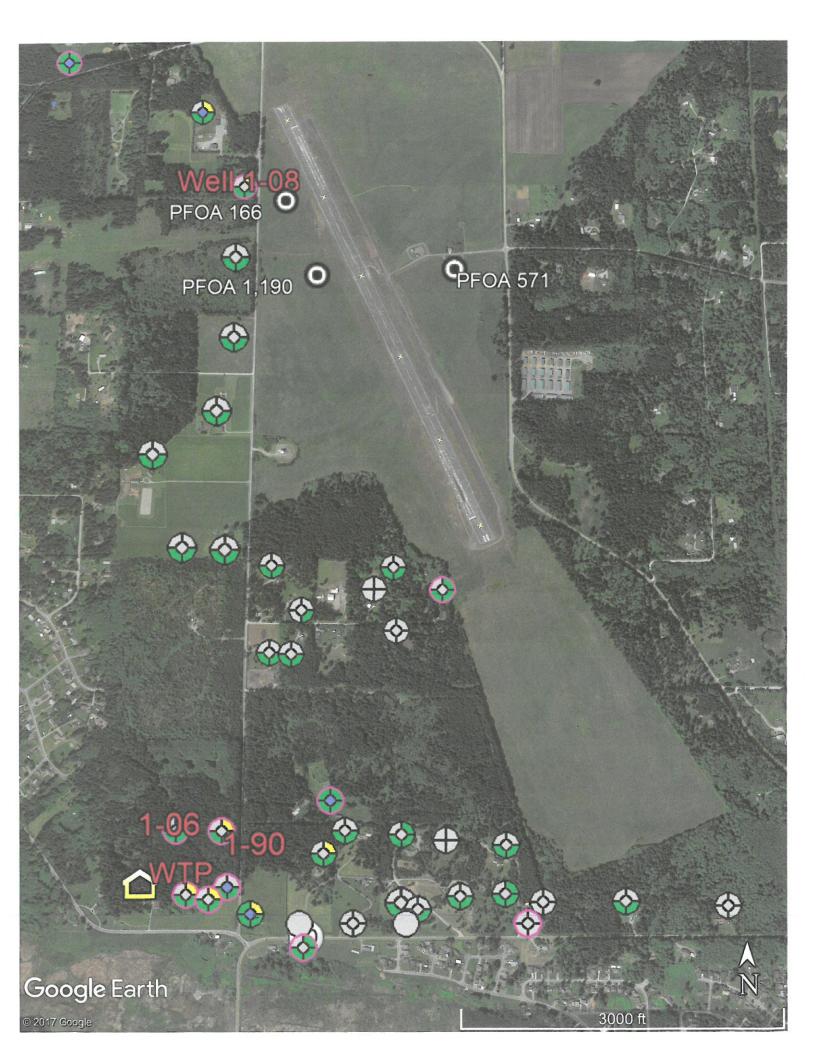
Ft Casey Water Plant can treat 210 gpm now. We are running it 23.7 hours per day.

We need to and we can double the treatment capacity at our plant.

But we probably should not turn up our workhorse, well 1-08, any higher. We are pulling the contamination plume toward our well.

We don't want to consider 487 or 287 as back up because we could pull the plume across the street to us.

We need a new well far enough away not to pull plume and possibly subsidize with 1-08, 1-06 and 1-90





















July 11, 2017

Secretary John Wiesman Washington State Department of Health PO Box 47890 Olympia, WA 98504-7890

Dear Secretary Wiesman:

A serious public health threat has emerged in Washington that needs your immediate attention. As you know, perfluorinated chemicals (PFAS), which are linked to multiple health effects including cancer, have been detected in the drinking water of several Washington communities, including Whidbey Island, Issaquah, and Airway Heights. We thank the Department of Health (DOH) for taking actions to test and help address this contamination. However, we are concerned that Washington state does not have a drinking water standard for these chemicals and that state residents are not adequately protected.

PFAS levels in residential wells near the naval air station on Whidbey Island were found at more than triple US EPA guidelines, most likely due to the use of firefighting foams. Issaquah also faced PFAS contamination from use of firefighting foam, requiring the installation of a filtration device for its municipal drinking water supply. And in May, a number of wells in Airway Heights community near the Fairchild Air Force Base in Spokane were found to be contaminated.

Without drinking water standards for these toxic chemicals, municipalities are not required to test residential water systems for PFAS chemicals or report test results to DOH. Thus there is no oversight and enforcement for chemicals that we know are harmful to our health. Residents should not be drinking water contaminated with these chemicals. Drinking water standards will ensure that they are not.

State action is needed because there is no federal regulatory drinking water standard. The EPA only has a non-binding health guideline of 70 parts per trillion (ppt) in drinking water for two forms of the chemical (for either PFOS or PFOA or both combined).

There is scientific evidence that the EPA guideline is not protective enough. Some states, including Minnesota, Vermont and New Jersey have adopted guidelines that are more protective for PFOA or PFOS, between 14 and 35 ppt.

It is also becoming clear that additional chemicals need to be included. Four leading scientists recently published a paper in Environmental Science & Technology titled "A Never Ending Story of Per- and Polyfluoroalkyl Substances (PFASs)?" making the case that these compounds need to be considered as a broader class. In their article, they state the following:

- "More than 3000 per- and polyfluoroalkyl substances (PFASs) are, or have been, on the global market, yet most research and regulation continues to focus on a limited selection of rather well-known long-chain PFASs...."
- "Among the thousands of PFASs still being produced and used, there are many overlooked ones that are structurally similar to PFOS, PFOA, or their precursors, and are produced in high volumes . . . "
- "Even though some PFASs may partially degrade in the environment and biota, they will all ultimately transform into highly stable end products . . . Thus, when assessing and managing PFAAs, all their precursors (which can be challenging to identify) need to be considered as relevant sources and managed as well."
- "The very high persistence of PFAAs leads to poorly reversible exposure to these substances in the global environment and some local/regional environments including groundwater. Past and ongoing production and use will lead to the accumulation of PFAAs in the global environment . . ."

Exposure to these compounds has been linked to a number of health concerns:

- Cancer: PFASs induce several types of tumors in laboratory animals, and the International Agency for Research on Cancer has designated PFOA as a possible carcinogen based on epidemiological evidence linking exposure to kidney and testicular cancer.²⁻⁴
- **Hormone disruption:** laboratory animals exposed to certain PFASs show abnormal levels of hormones, including thyroid hormones and testosterone. Children exposed to greater levels show reduction in hormone levels and delayed puberty.⁵
- Liver toxicity: PFASs are associated with liver enlargement in laboratory animals.
- Harm to the immune system: recent research has identified the immune system as sensitive to PFASs in both laboratory and epidemiological studies. A 2012 study of 587 children found those with greater exposure to PFASs had significantly poorer responses to vaccines.⁶
- Reduced birth weight: a number of large epidemiological studies have related higher maternal exposure to PFASs to lower birth weight. These are consistent with laboratory findings of developmental toxicity.⁷

We understand that there are numerous sources of these chemicals in the environment, from firefighting foam to food packaging. This is why we are very supportive of the state moving forward swiftly with developing and implementing a chemical action plan.

Given the growing scientific evidence and concern in Washington with respect to drinking water contamination, we request that the DOH take the needed steps to establish drinking water standards for PFAS chemicals. We would also request a meeting to discuss these issues further

with you. Please contact Laurie Valeriano, Executive Director, Toxic-Free Future to arrange a meeting. Her contact information is 206-200-2824 or lvaleriano@toxicfreefuture.org.

Thank you very much for your attention to this critical matter.

Sincerely,

Laurie Valeriano Executive Director Toxic-Free Future

Heather Trimm Executive Director Zero Waste WA

Karen Bowman, MN, RN, COHN-S Environmental Health Specialist Washington State Nurses Association

Bruce Speight Executive Director WashPIRG

Diana Stadden Policy & Advocacy Coordinator Arc of Washington State

Noah Seidel Self-Advocacy Coordinator Self Advocates in Leadership

LeeAnne Beres Executive Director Earth Ministry

Felipe Rodriguez-Flores Director of Civic Engagement and Advocacy Progreso: Latino Progress

Citizens for Ebey's Reserve (COER)

Anne Harvey Whidbey Water Keepers

References

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- 7. Bach, C. C.; Bech, B. H.; Brix, N.; Nohr, E. A.; Bonde, J. P. E.; Henriksen, T. B., Perfluoroalkyl and polyfluoroalkyl substances and human fetal growth: A systematic review. **2015**.

Joe Grogan

From:

Richard Abraham < richardcabraham@gmail.com>

Sent:

Wednesday, October 11, 2017 12:52 PM

To:

Geryl Forbes; Eric Anderson; Grethe Cammermeyer; Ron Wallin; Sharon Lerner; Hal

Bernton; Kurt Blankenship; wghdistrict4@whidbeyhealth.org

Cc:

Jake Kempton

Subject:

Re: Update to public records request 01579

Attachments:

PFAS Testing.pdf; ATT00001.htm

10-11-2017

TO:

Whidbey Health CEO Geryl Forbes

Whidbey Health Board of Commissioners

RE: Coupeville and WGH's PFAS Contaminated Water

From: Richard Abraham.

This open letter responds your General Counsel, Jake Kempton's 10-7-17 communication regarding the hospital's PFAS contaminated water. I am also asking that the hospital re-test of its water for PFAS contaminates and correct its related public statements.

The hospital's "pre-filter" and "post-filter" samples do not prove that these chemicals have been removed from the hospital's water. For the hospital to suggest that its coffee and ice machine filters remove these chemicals is misleading. Mr. Kempton's letter state's, "for reasons unknown" a different laboratory was used for the "post-filter" water tests than was used for the "pre-filter" tests. He ignores the fact that less sensitive detection limits were used for the "post-filter" analysis. For example, the PFHxS found at 27.8 ppt in the "pre-filter" sample would not have been identified in the analysis of the "post filter" sample which had a method reporting limit of 30 ppt. This kind of skewed testing creates the false impression that contaminants are being removed from the water when that may not be the case.

The chronology of events provided by Mr. Kempton conveniently ignores CEO Geryl Forbes' April 11, 2017 communications with Coupeville Mayor Molly Hughes. The day after the Board of Commissioners were told of the need for an appropriate filter system, CEO Forbes and the Mayor Hughes exchanged wording for the hospital's public response. Their suggested wording proclaimed the safety of the hospital's water and rejected the need for PFAS filtration. This communication took place before the hospital conducted its "pre-filter" and "post-filter" tests".

In the April 11 email to CEO Forbes, Mayor Hughes states, "I would leave out the part about your filter. Unless you know for a fact that you use activated charcoal and your filter system is large enough to treat the hospital's water and the media is changed out often enough, I think it's risky to imply you are treating your water for these compounds. Someone will check."

Instead of installing what the Mayor acknowledged would be an appropriate filter system, the hospital apparently had tested its water in a way to indicate PFAS filtration was not necessary. It is no surprise that CEO Forbes announced that the hospitals water would not be tested again.

The hospitals claim that it is not, "attempting to hide anything from [me] or the general public" is simply not believable. If you don't want to hide anything, then retest your water and make the results public. If you do retest, use the method of analysis that the Town used when it began testing, in secret, for the six PFASs of concern. I say in secret because the results of this testing were not, until recently, made public. I have enclosed a communication identifying the kind of testing that needs to be done.

The Town's unpublicized water testing of December 2016 and March and June of 2017 revealed PFOA, PFHpA, PFBS, and PFHxS to be in the same water used by the hospital. The hospital has known, or should have known that these same chemicals were in the water going to unknowing patients, employees and visitors. Given that nothing has been done by the Navy, the Town of Coupeville, or the hospital to remove these contaminates, it is reasonable to assume they are still in the water that your General Counsel acknowledges, "is consumed by our patients."

Do a minimum amount of homework and you'll understand the risks of exposure to these chemicals. The fact that these chemicals are unregulated at the Washington state or federal level doesn't not mean they are safe to drink. The lack of standards should not be used as an excuse to accept them being in our water.

Please inform me when the rest of the documents I requested pursuant to Washington's Public Records Act are available.

Sincerely,

Rick Abraham

On Oct 7, 2017, at 1:16 PM, Jake Kempton < kemptj@whidbeyhealth.org wrote:

Mr. Abraham,

The District has recently identified additional documents that appear to fall within the scope of your most recent public records request, but that were not included in the response that was sent to you on 9/8/17. The additional documents are email communications between two third parties and which were not under our possession or control at the time your request was fulfilled (see below for further explanation). Attached are the following items that were not previously included:

- Email correspondence between Andersen Construction and Diamond regarding the water sample requests made by the District.
- A copy of the relevant section of the April 18th construction committee meeting minutes held between the District and Andersen Construction, reflecting the original request for water sampling made by the District.
- a screen shot of a text message sent by George Senerth to Andersen Construction detailing the specifications for the requested water sampling.

The remaining records that are currently unavailable are the email communications between Diamond B and the laboratory regarding the specific request for water sampling. These communications are currently not within our control; however we anticipate that the rest of the records will be available for you early next week.

I would like to also attempt to address some of your concerns mentioned in your open letter to CEO Geri Forbes you included the following statement: "Missing from WH's response to my public records requests, is the communication to the laboratory identifying the requirements for the pre and post filter testing the hospital requested. Provide the missing document and those questions might be answered."

First and foremost, please understand that the District is not attempting to hide anything from you or the general public. That the documents were omitted from the District's most recent response was purely an oversight, due largely to the fact that the documents were not in the possession or control of the District at the time your request was fulfilled. I've done my best to outline a summary and accurate timeline of events below, which will, I hope, provide you with much greater clarity to the situation.

To give a brief summary of the water testing process, immediately following your presentation to the board of commissioners in April the District requested Andersen Construction to perform a pre-filtration and post-filtration sample of the water. As mentioned in a previous response, the hospital does not maintain a system-wide filtration system. However, it does maintain equipment-specific filters, as recommended by the manufacturer. While these equipment-specific filters were never intended to serve as a hospital-wide system, they do provide filtering for water that is consumed by our patients (ex. all the ice machines, coffee machines, etc... contain individual filters). The post-filter test was performed on one of these pieces of equipment.

Upon receiving our request, Andersen assigned it to one of its subcontractors, Diamond B, to perform the testing. However, Diamond B misunderstood the initial request, which was to perform a sample of water pre-filtration and post-filtration test, and only sent a <u>pre-filtration</u>sample to Avocet Laboratories for testing. When Andersen Construction discovered that Diamond B had failed to conduct a post-filtration test, it requested Diamond B to repeat the test at a post-filtration point. For reasons unknown to WhidbeyHealth, Diamond B used a different laboratory to perform the post-filtration test.

Timeline of Events:

- On 4/10/17 you appeared before the District's board of commissioners and provided them with information regarding the recent testing that had been performed by the navy, and voiced your concern regarding the safety of the District's water.
- On 4/13/17, in a construction meeting with Andersen (the GC overseeing the construction of the new wing), the District requested Andersen to perform water samples (see pg. 6 of attached OAC Minutes)
- On 6/12/17, a representative from Andersen sent an email request to George Senerth asking for our requirements for the water testing (see attachment).
- On 6/12/17 George Senerth responded to the Andersen representative's request by sending him a picture text message of the report that you provided to the board, highlighting the specific chemicals that had been identified in several wells in Coupeville (see picture attachment).
- On 6/15/17 Andersen Construction sent a request for testing of both pre a post filtering, to include testing for PFOA, PFHpA, PFBS, and PFHXS (see email attachment).
- On 6/30/17 Diamond B sent the pre-filtration results to Andersen Construction. (see email attachment)
- On 7/5/17 Andersen Construction notified Diamond B that a post-filtration test would also be needed, as originally specified. In a subsequent communication to Diamond B, Andersen clarified that the District had not changed its testing criteria for post-filter testing (see email attachment July 5, sent at 11:05 AM "Yeah, same testing pre and post filtering").
- On 7/24/17 you emailed me requesting additional information in regards to the hospital's response to your presentation on 4/10.
- On 7/24/17 George Senerth had a follow-up conversation with the representative from Andersen regarding the water sampling (see email sent in previous response).
- On 7/25/17 Andersen Construction sent a follow-up email to Diamond B requesting the status of the results (see attached email).
- On 7/26/17 George Senerth sent a follow-up email to Andersen Construction requesting a status update (see attached email).
- On 8/3/17 the Andersen rep responded by stating that the results were expected back on the 9th or 10th (see email sent in previous response).
- On 8/15/17 the District received the results from the post-filter testing.

- On 8/17/17 the District received your most recent public records request and provided you with a copy of the test results on the same day.

Again, the District anticipates that the rest of the documents will be available next week. If, after reading this email, you believe these emails are no longer pertinent to your inquiry, please let me know. I hope that this communication bring some clarity to the situation.

Please feel free to call me if you would like to discuss or have any questions.

Jake

The information contained in this transmission, including any attachments, is for the sole use of the intended recipient(s) and may contain privileged and confidential information, including patient information protected by federal and state privacy laws. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. If you have received this message in error and you believe that it contains patient information, please contact the WhidbeyHealth Privacy Officer immediately at 360-678-7656. Please also note that this email may be subject to disclosure under the Washington State Public Records Act, 42.56 RCW.

Anatek Labs, Inc.

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Client:

David Kline

Address:

1. - 11

4558 91st Avenue SE

Mercer Island, WA 98040

Batch #:

170103006

Project Name:

EPA 537

Analytical Results Report

Sample Number 170103006-001 Client Sample ID 1208 NE BURNHAM PL Matrix Drinking Water Comments			Sampling Date Sampling Time		Agenta to a second control of the second con		me Received ion Date	1/3/2017 1/5/2017	9:35 AM	
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier	
Perfluorobutane	Perfluorobutanesulfonic acid - PFBS		ug/L	0.025	0.09	1/9/2017	TGT	EPA 537		
Perfluoroheptanoic acid - PFHpA		< 0.005	ug/L	0.005	0.01	1/9/2017	TGT	EPA 537		
Perfluorohexan	Perfluorohexanesulfonic acid - PFHxS		ug/L	0.01	0.03	1/9/2017	TGT	EPA 537	J	
Perfluorononanoic aid - PFNA		ND	ug/L	0.005	0.02	1/9/2017	TGT	EPA 537		
Perfluorooctane	esulfonic acid - PFOS	ND	ug/L	0.01	0.04	1/9/2017	TGT	EPA 537		
Perfluorooctano	oic acid - PFOA	0.0288	ug/L	0.005	0.02	1/9/2017	TGT	EPA 537		

Surrogate Data

Sample Number	170103006-001				
Surrogate Standard		Method	Percent Recovery	Control Limits	
13C-PFDA		EPA 537	83.4	70-130	
13C-PFHxA		EPA 537	77.1	70-130	

Authorized Signature

Todd Taruscio, Lab Manager

The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

MCL EPA's Maximum Contaminant Level

ND Not Detected

PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.

The results reported relate only to the samples indicated.

Soil/solid results are reported on a dry-weight basis unless otherwise noted.



ANATEK LABS, INC - Multi-state Certified, NEL 170103 006 ZZZZ Last 1/13/2017 1282 Alturas Drive, Moscow ID 83843 (208)883-2839 FAX 882-1 1st SAMP 12/28/201 1st RCVD 1/3/2017 1504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX 838 EPA 537

UCMR Chain of Custody

Customer Signature Shipping/Delivery Date	LIST 1 EPA 200.8 EPA 200.8 EPA 218.7 EPA 300.1 - Note Disinfectant type to the right > EPA 522 EPA 524.3 EPA 537 FIELD BLANK FIELD BLANK		FACILITY NAME Cor Box NE BluiNham F) FACILITY ID Sampler Name Sampler Name	Sample Type Source Type EP SW MR GU	CITY STATE ZIP NECES 152 AND WA	SEND REPORT TO DAND KLINE ADDRESS 10-PENLE - 1208 NE BARMAN PL 4558 9257 AVE SE
Received By Date Received		Check Desired Analyses	Time Collected	SAMPLING EVENT (circle one) SE 1 - SE 2 - SE 3 - SE 4	Servo County	Water System # Phone Number Fax Number
1/3/17 0935	Gaseous chlorine Offsite generated hypochlorite Orsite generated hypochlorite Chloramine (formed from gaseous chlorine) Chloramine (formed from offsite hypochlorite) Chloramine (formed from onsite hypochlorite) Chloramine (formed from onsite hypochlorite) Ultraviolet Light Ozone All other types of Disinfectant Chlorine Dioxide - Sample Sparged?: Y / N	Tus C	Receiving Check List Received Intact Received Intact Into Headspace Interp: 3,542 - 2 Interfee Packs Present Custody Seals Present Pereservatives: 7247	Payment due with samples, unless credit has been established	15cm0	206-427-8960 DAVI) KLINEC ONTLOOK, CON



COMMANDER, NAVY REGION NORTHWEST

1100 Hunley Road, Silverdale, WA 98315-1100 Phone: (360) 396-1630 Fax: (360) 396-7217

FOR IMMEDIATE RELEASE Release 16-295

October 27, 2016

Navy to Begin Drinking Water Testing

SILVERDALE, Wash. – The Navy will begin testing drinking water wells next month in and around Naval Air Station (NAS) Whidbey Island Ault Field and the Outlying Landing Field (OLF) in Coupeville as part of the its commitment to ensuring drinking water supplies are safe. These tests will be at no cost to the well owners or users. This is part of Navy's ongoing testing of drinking water that is currently taking place at and near Navy installations across the Nation.

Navy officials met today with staff members from Washington State's congressional offices on Capitol Hill to discuss a variety of subjects, where officials shared the Navy's current plan to test drinking water supplies around NAS Whidbey Island for perfluoroalkyl substances, aka PFAS. Tomorrow Navy leadership will meet with local officials in the northwest region.

PFAS are man-made chemicals persistent in the environment that are not absorbed well in soil and could migrate to groundwater. PFAS have been used for many years to make products that resist heat, stains, grease and water, and have been used in a variety of products and substances, such as non-stick pans; water resistant textiles and sprays with water resistant properties.

In May 2016, the U.S. Environmental Protection Agency issued lifetime health advisory levels for two PFAS, specifically perfluorooctane sulfonate, PFOS and perfluorooctanoic acid, PFOA, at 70 parts per trillion, individually and combined. While there are no EPA regulations for these compounds, the EPA established these lifetime health advisory levels to offer a margin of protection for all Americans throughout their life from potential adverse health effects resulting from exposure to PFOA and PFOS in drinking water.

The most common historical Navy use of these chemicals has been as a fire fighting foam (AFFF) used on Navy installations. AFFF is the most effective way to put out petroleum-based fires, such as an aircraft accident.

In June 2016, the Navy issued a policy to identify areas of potential release of these materials to the environment. As part of this policy, the Navy is testing for PFOS and PFOA in and around NAS Whidbey Island.

The Navy will provide alternate drinking water (typically bottled water) for residents if their drinking water concentrations exceed the EPA lifetime health advisory levels for PFOA and/or PFOS.

Next month, the Navy will hold public meetings to keep the community informed and will contact well owners in the sample area. Public meetings will be held in Oak Harbor and Coupeville in order for citizens to share their concerns and ask questions of public health experts. The Navy is committed to sharing additional information as it becomes available throughout the testing process.

More information about the Navy's PFAS initiative and drinking water testing program may be found at: http://www.secnav.navy.mil/eie/pages/pfc-pfas.aspx.



















July 11, 2017

Secretary John Wiesman Washington State Department of Health PO Box 47890 Olympia, WA 98504-7890

Dear Secretary Wiesman:

A serious public health threat has emerged in Washington that needs your immediate attention. As you know, perfluorinated chemicals (PFAS), which are linked to multiple health effects including cancer, have been detected in the drinking water of several Washington communities, including Whidbey Island, Issaquah, and Airway Heights. We thank the Department of Health (DOH) for taking actions to test and help address this contamination. However, we are concerned that Washington state does not have a drinking water standard for these chemicals and that state residents are not adequately protected.

PFAS levels in residential wells near the naval air station on Whidbey Island were found at more than triple US EPA guidelines, most likely due to the use of firefighting foams. Issaquah also faced PFAS contamination from use of firefighting foam, requiring the installation of a filtration device for its municipal drinking water supply. And in May, a number of wells in Airway Heights community near the Fairchild Air Force Base in Spokane were found to be contaminated.

Without drinking water standards for these toxic chemicals, municipalities are not required to test residential water systems for PFAS chemicals or report test results to DOH. Thus there is no oversight and enforcement for chemicals that we know are harmful to our health. Residents should not be drinking water contaminated with these chemicals. Drinking water standards will ensure that they are not.

State action is needed because there is no federal regulatory drinking water standard. The EPA only has a non-binding health guideline of 70 parts per trillion (ppt) in drinking water for two forms of the chemical (for either PFOS or PFOA or both combined).

There is scientific evidence that the EPA guideline is not protective enough. Some states, including Minnesota, Vermont and New Jersey have adopted guidelines that are more protective for PFOA or PFOS, between 14 and 35 ppt.

It is also becoming clear that additional chemicals need to be included. Four leading scientists recently published a paper in Environmental Science & Technology titled "A Never Ending Story of Per- and Polyfluoroalkyl Substances (PFASs)?" making the case that these compounds need to be considered as a broader class. In their article, they state the following:

- "More than 3000 per- and polyfluoroalkyl substances (PFASs) are, or have been, on the global market, yet most research and regulation continues to focus on a limited selection of rather well-known long-chain PFASs...."
- "Among the thousands of PFASs still being produced and used, there are many overlooked ones that are structurally similar to PFOS, PFOA, or their precursors, and are produced in high volumes . . . "
- "Even though some PFASs may partially degrade in the environment and biota, they will all ultimately transform into highly stable end products... Thus, when assessing and managing PFAAs, all their precursors (which can be challenging to identify) need to be considered as relevant sources and managed as well."
- "The very high persistence of PFAAs leads to poorly reversible exposure to these substances in the global environment and some local/regional environments including groundwater. Past and ongoing production and use will lead to the accumulation of PFAAs in the global environment . . ."

Exposure to these compounds has been linked to a number of health concerns:

- Cancer: PFASs induce several types of tumors in laboratory animals, and the International Agency for Research on Cancer has designated PFOA as a possible carcinogen based on epidemiological evidence linking exposure to kidney and testicular cancer.²⁻⁴
- Hormone disruption: laboratory animals exposed to certain PFASs show abnormal levels of hormones, including thyroid hormones and testosterone. Children exposed to greater levels show reduction in hormone levels and delayed puberty.⁵
- Liver toxicity: PFASs are associated with liver enlargement in laboratory animals.
- Harm to the immune system: recent research has identified the immune system as sensitive to PFASs in both laboratory and epidemiological studies. A 2012 study of 587 children found those with greater exposure to PFASs had significantly poorer responses to vaccines.⁶
- Reduced birth weight: a number of large epidemiological studies have related higher maternal exposure to PFASs to lower birth weight. These are consistent with laboratory findings of developmental toxicity.⁷

We understand that there are numerous sources of these chemicals in the environment, from firefighting foam to food packaging. This is why we are very supportive of the state moving forward swiftly with developing and implementing a chemical action plan.

Given the growing scientific evidence and concern in Washington with respect to drinking water contamination, we request that the DOH take the needed steps to establish drinking water standards for PFAS chemicals. We would also request a meeting to discuss these issues further

with you. Please contact Laurie Valeriano, Executive Director, Toxic-Free Future to arrange a meeting. Her contact information is 206-200-2824 or lvaleriano@toxicfreefuture.org.

Thank you very much for your attention to this critical matter.

Sincerely,

Laurie Valeriano Executive Director Toxic-Free Future

Heather Trimm Executive Director Zero Waste WA

Karen Bowman, MN, RN, COHN-S Environmental Health Specialist Washington State Nurses Association

Bruce Speight Executive Director WashPIRG

Diana Stadden
Policy & Advocacy Coordinator
Arc of Washington State

Noah Seidel Self-Advocacy Coordinator Self Advocates in Leadership

LeeAnne Beres Executive Director Earth Ministry

Felipe Rodriguez-Flores Director of Civic Engagement and Advocacy Progreso: Latino Progress

Citizens for Ebey's Reserve (COER)

Anne Harvey Whidbey Water Keepers

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These key messages are intended as talking points to help respond to questions from federal, state, local, territorial, and tribal health officials.

On May 19, 2016, the United States Environmental Protection Agency (USEPA) released a Lifetime Health Advisory (LTHA) for two perfluoroalkyl and polyfluoroalkyl substances (PFAS)-- Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA). The LTHA PFAS level is lower (70 parts per trillion, as a combined total PFOS and PFOA) than the level in the previous 2009 provisional (short-term) Health Advisory (200 and 400 parts per trillion for Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), respectively). NCEH/ATSDR knows that exposure to perfluoroalkyl substances (PFAS) is widespread, and that many of our local, territorial, tribal, state and federal partners may require assistance in addressing concerns related to PFAS contaminated water supplies.

We are taking steps to assist state and federal partners and affected communities in addressing concerns. ATSDR is assessing the feasibility of conducting health studies in communities with PFAS-contaminated drinking water, with the current focus on a possible study at the Pease Tradeport in New Hampshire (formally known as Pease Air Force Base, as well as other Department of Defense-related sites. This assessment will determine how ATSDR will address key data gaps in exposures to PFAS-contaminated drinking water and associated human health effects. In addition to the feasibility assessment, ATSDR has been providing technical assistance and/or conducting risk assessments of PFAS at several other locations around the country.

<u>Key Message #1</u>: Some, but not all, scientific literature suggests that certain PFAS may affect a variety of systems in the body. Additional research is needed to better understand possible human health effects from exposure to PFAS in water and food.

Scientists are not yet certain about the possible health effects resulting from human exposure to PFAS at levels typically found in our food and water. Some, but not all studies in humans have suggested that certain PFAS may affect the developing fetus and child, including possible changes in growth, learning, and behavior. In addition, they may decrease fertility and interfere with the body's natural hormones, increase cholesterol, affect the immune system, and increase cancer risk.

More research is needed to confirm or rule out possible links between health effects of potential concern and exposure to PFAS.

Many types of PFAS exist in the environment. Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), perfluorohexane sulfonate (PFHxS) and perfluorononanoic acid (PFNA) have been more widely studied than other PFAS. For the most part, laboratory animals exposed to high doses of PFOA or PFAS, including the PFAS mentioned above, have shown changes in liver, thyroid, and pancreatic function, as well as some changes in hormone levels. However, scientists are not sure how animal data apply to human exposure because PFAS behave differently in humans than they do in animals and may be harmful in different ways.

Some PFAS have a long half-life in the body, that is, the levels decrease very slowly over time. The ability of these compounds to accumulate in the body, also known as body burden, increases concerns about the possible effects on human health.

At this time, there is not enough information to evaluate the health effects of exposures to mixtures of PFAS. However, available evidence suggests that PFAS with similar chemical structures have similar health endpoints. NCEH/ATSDR recommends the dose additivity approach for risk assessment (i.e. their combined effect is equal to the sum of their individual effects). Further studies are needed to understand whether the same effects are caused by the same mechanism of action.

<u>Key Message #2</u>: A careful assessment of the water systems is needed if the levels of PFOA and PFOS exceed the EPA lifetime health advisory (LTHA). While alternative sources of water may be necessary in some situations, changing to a different water source may not be necessary if measures can be taken over the short-term to reduce levels below the LTHA.

- Decision-making for alternate water should be based in part on confirmatory water testing, how the water system operates, and what concentrations of PFAS are found at the point of use (e.g., at the tap).
- NCEH/ATSDR supports action to reduce PFAS concentrations in drinking water. A careful evaluation of the magnitude, frequency, and duration of exposure and risk in local drinking water sources is necessary to make local recommendations about the use of alternative water. During a short-term water remediation period (weeks, months), alternate water supplies are not necessary for most populations (see cautionary exception below) if concentrations to PFOA and PFOS are modestly above the LTHA. That is, modest short-term exposures above the LTHA are not thought to contribute significantly to health risks. Although not thresholds for health effects, ATSDR has previously supported providing alternate water at sites with water exceeding the EPA's 2009 Provisional Health Advisory established levels of 400 parts per trillion (ppt) for PFOA and 200 ppt for PFOS.
- The LTHA was developed to be protective of the most sensitive populations (fetuses and infants) to protect against short-term and long-term (life time) health effects. The LTHA concentrations do not represent definitive cut-offs between safe or unsafe conditions, but rather provide a margin of protection for individuals throughout their life from possible adverse health effects. The LTHA was derived utilizing uncertainty factors to increase confidence that the recommended LTHA is well below levels associated with possible health effects.
- Pregnant and lactating women, caregivers preparing formula for bottle-fed infants, and women of child-bearing age might consider seeking an alternate water source if levels exceed the LTHA. However, exposure of fetuses and nursing infants to PFOA and PFOS is influenced by past exposures of the mother to these chemicals, body burden, and slow excretion of these substances from the body.

<u>Key Message #3</u>: If your water contains PFAS, particularly if levels exceed the LTHA, you can reduce exposure by using an alternative or treated water source for drinking, food preparation, cooking, brushing teeth, and any activity that might result in ingestion of water. It is safe to shower and bathe in PFAS-contaminated water.

Published studies have shown very limited absorption of PFAS through the skin. Using contaminated water for bathing or showering, washing dishes, and doing laundry is not expected to result in significant exposure to PFAS.

<u>Key Message #4</u>: Breastfeeding is linked with numerous health benefits for both infants and mothers. At this time, it is recommended that nursing mothers continue to breastfeed, including mothers in localities where PFAS exceeds the LTHA. The science on the health effects of PFAS for mothers and babies is evolving. When PFAS is ingested by the mother, it is transferred to the breast milk. However, given the scientific understanding at this time, the benefits of breastfeeding outweigh any known risk. To better weigh the risks and benefits of breastfeeding, mothers should contact their doctors.

Key Message #5: NCEH/ATSDR does not advise individuals to have their blood tested for PFAS.

Although specific PFAS can be measured in serum (blood), the measurements must be done in specialized laboratories and are expensive. Further, a serum PFAS concentration does not provide information that can be used to diagnose a health effect or guide a treatment plan, and cannot predict future health effects. It does not indicate when exposure occurred or the source of the exposure, although it may be suggestive.

It is important to keep in mind that most Americans have serum concentrations of one or more specific PFAS, especially PFOS and PFOA. Serum PFAS measurements are most helpful as part of a carefully designed research study.

<u>Key Message #6</u>: NCEH/ATSDR is involved, either directly or through assisting local, territorial, tribal, state and federal partners.

Most situations we are working on are related to drinking water contamination. We are working with two state partners on sites where PFAS-contaminated drinking water and consuming PFAS-contaminated fish are concerns. See the ATSDR PFAS for more information:

http://www.atsdr.cdc.gov/pfc/atsdr_sites_involvment.html

We are reaching out to state health departments to offer technical assistance

ATSDR is developing a profile of the toxicity of PFAS. ATSDR's draft Toxicological Profile reviews the current state of the evidence for the toxicity of PFOS and PFOA and will establish a minimal risk level (MRL) for both.

A MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure. These substance specific estimates, which are intended to serve as screening levels, are used by ATSDR health assessors and other responders to identify contaminants and potential health effects that may be of concern at hazardous waste sites. It is important to note that MRLs are not intended to define clean up or action levels for ATSDR or other Agencies.

EPA Health Advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and provide technical guidance to state agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. The health advisory values are based on non-cancer health effects for different durations of exposure (for example, one-day, ten-day, and lifetime).

FOR IMMEDIATE RELEASE:

TOWN OF COUPEVILLE PRESS RELEASE – 11-7-16

Town of Coupeville Wells

The Town of Coupeville will be conducting tests on four town water supply wells located in the Keystone and Fort Casey well fields. These tests will be conducted as a result of the EPA recently setting lifetime health advisory levels for two compounds, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). These compounds are found in firefighting foam. NASWI has no records of this foam being used at OLF Coupeville, however, a trace amount of these compounds were found in a Navy well, tested on the airfield earlier this fall. The Town of Coupeville has determined it prudent to conduct independent testing on its own wells. At this time we have no reason to be concerned for the safety of the town's water, but we must be deliberate and vigilant in obtaining all the information we can to confirm that the Town's water supply meets or exceeds all applicable public drinking water supply standards.

The PFOA and PFOS compounds are tested in parts per trillion, requiring specific sampling and testing protocol. Staff from the State Department of Health regional office will be helping us to collect the water samples. A lab in Spokane will be conducting the actual tests. All tests will be conducted under strict quality control procedures. Samples will be taken this week and results are expected in early December.

The Navy will also be testing the Town wells later in November when they conduct other testing of private wells around the OLF. The Town looks forward to getting the Navy's results. This redundancy in testing of the Town wells, will help us all feel confident in the final results. When completed both the Town and the Navy test results will be made available to the public.

Drinking water is highly regulated by the Washington State Department of Health and US Environmental Protection Agency and is tested regularly. The water for Coupeville comes from aquifers. Well water at the Ft. Casey Water Treatment Plant is treated for the removal of iron and manganese, components often found in the Whidbey Island source waters. It is chlorinated before entering the Town's distribution system. The entire treatment process is regularly monitored by state certified operators through daily, routine testing. You can view our annual Water Quality Monitoring Results on the town website. Go to:

www.townofcoupeville.org - Documents & Info - Water Quality Reports - nine years of reports

If you have questions about the testing, please call Mayor Molly Hughes at Town Hall. 360-678-8312

FOR IMMEDIATE RELEASE:

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Neighbors,

On Aug. 18 th I went to this meeting. I went to hear about 1-4 Dioxane Study and to find out what was happening...... Curiosity......Glad I went. I am not a typist so bear with me. The notice of the meeting was not very informative and even if you saw the notice the phone and contact info was pretty useless. I left the meeting outraged, angry but determined citizens should be told of the content. I got home and the next day contacted the Whidbey News Times and dropped of all the info. I had been given along with my verbal observations of what I had heard. That was over 1 month ago I have called with no return call back. I had hoped I could let the newspaper do the story and I could remain simply a concerned homeowner but that has not happened. My moral barometer will not let this go virtually unknown.

When 4 plus years ago the Gallery Golf Cs. Received permission to pump millions of gallons of water I had lots of concerns. My biggest was the possibility of movement of contaminants in the aquifer from the old fire school next to the course and Rocky Pt. Park. When I spoke to the EPA about the pumping they knew nothing about it, but she voiced some concern and brought up the "Bad players that are in your area". I asked "What do you mean by bad players? She then told me "carcinogenic ie; cancer causing. We know they are there but we have no tests or guidelines for the group of bad players. Needless to say I was not very happy.

Well they have tests and guidelines NOW and according to the meeting wells within 1 mile will have to be tested. This plan will take up to 2 years for the govt. to put into action. There is NO plan to contact homeowners NOW. Hundreds of sites nationwide most military in nature. There is a lawsuit in Pennsylvania at a now closed Navy base for contaminated wells. Erin Brokovitch Is involved so there is media coverage.

The chemical family is PFAS and was commonly used in fire retardants . As I understood this is a pretty bad chemical . That group of chemicals was listed as used and traceable at Rocky PT at the SuperFund site listed as there.

Equally bad news concerns the 1-4 Dioxane plume of contaminants has escaped Navy property and the picture is not terribly good. The plume is advancing 400 ft. approx.. per year . Within that area the govt. knows of atleast 14 wells possibly effected NOW . At the meeting they were working on a plan within hopefully 2 months to contact those homeowners. Again they have known for some time and are working on the plan. The quote was "We know the govt. is slow"

So here I am, I really hate this kind of news and even less to be the one sharing it. I was so angry that my neighbors would be left in the dark. I cannot participate in that !!!!

What you choose to do as a community I will support to the fullest. I could not put everything in this letter but I'm sure it has been enough. I've tried to be as accurate as memory serves.

Thank you for your patience and being the good neighbors you are.



NAS Whidbey Island Invites you to a meeting of the Installation Restoration Program Restoration Advisory Board

August 18, 2016 – 1 pm to 3 pm City of Oak Harbor Municipal Shop 1400 NE 16th Avenue, Oak Harbor, WA

Meeting Topics Include:
Land Use Control Inspections
Seawall Repair

1,4-Dioxane Focused Feasibility Study
Rothboeck Ravine Investigation
State Petroleum Cleanup Program
Military Munitions Response Program

For more information please contact:

Michael Welding

Naval Air Station Whidbey Island

360.257.2286

Michael.Welding@navy.mil



Restoration Advisory Board Meeting August 18, 2016 Naval Air Station Whidbey Island

Agenda



- 1) Welcome, Introductions, and Personnel Updates
- 2) Minutes from February 24, 2015 Meeting Review
- 3) Military Munitions Response Program Update
- 4) State Petroleum Cleanup Program Update
- 5) CERCLA Program Sites Update
 - a) Rothboeck Ravine
 - b) Hangar 5
 - c) Area 6 Update
 - d) Emerging Contaminants
 - e) Area 1 Beach Landfill

~BREAK~

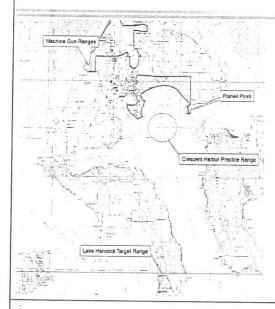
- 6) Concerns from the Public
- 7) Members Comments
- 8) Old Business
- New Business

~CONCLUSION~

- 10) Next Meeting Date
- 11) Meeting Adjournment

Military Munitions Response Program Update

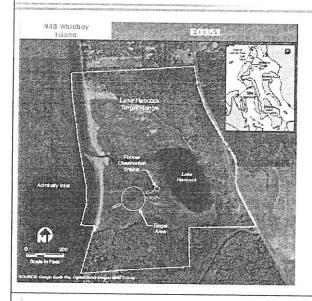




- Former Lake Hancock Target Range
- Former Poinell Point EOD/ Ordnance Burn Area
- Former Aviation Fleet Gunnery School
 - Mobile Turret Tower Range
 - Machine Gun Ranges B & C
- Former Ault Field Boresight Range (RA-C)
- Former Seaplane Base Pistol Range (RA-C)

Former Lake Hancock Target Range





Location: West coast of Whidbey Island near Greenbank, ~ 20 miles south of Ault Field

Identified Contaminants: Munitions Debris (Rocket Motor Bodies & Spotting Charges)

Established in 1944, operated until 1974 as a training range.

Used as an air-to-land target range for the firing of rockets, bombs and pyrotechnics (flares, signals, simulators, etc.).

Historical documents indicate the ordnance used was inert/practice.

CURRENT STATUS: Finalizing Record of Decision. Open House was held at Greenbank Farm on 11 July 2016. Public Comment period ended 27 July 2016.

LHTR Previous Actions



CONTRACTOR CONTRACTOR		NOTIFIE NOTIFIED AND ADDRESS OF THE PROPERTY O
1972	EOD Surface Clearance	Surface clearance of beach areas & marshlands, underwater (divers) to ~ 50 feet off the beach. Recovered 14 tons of various types and sizes of practice bombs, rockets & smokes, mostly in the target area and in the waters off the beach. Documents describe the recovered items as inert.
1973	EOD Surface Clearance	Surface clearance removed ~ 3,000 pounds of rocket motors, four rocket motor tubes and one complete inter-rocket.
1973	Limited Subsurface Clearance	~3 acres subsurface, recovered 3 inert rocket motors from depths of 3 to 5 feet. Beach search at minus tides, no ordnance found.
1995 - 1997	Site Hazard Assessment	Sediment and surface water sampling, no munitions constituent exceedances, some metals found above background.
1996	Geophysical Survey and Investigation	Found steel plates, one rocket motor, and various metallic debris.
1997	Ramoval Action	Cleaned up metal-contaminated soil near the former observation shelter completed under WA Department of Ecology's (WA DOE) Model Toxics Control Act (MTCA).

LHTR Previous Actions



0000		Recommended a Site Inspection for munitions constituents.
2009	Site Investigation	Site Investigation for lead and perchlorate, no exceedances found.
2010-11	Focused Feasibility Study	Four alternatives for surface and limited subsurface clearance.
2012-13	Wetlands Delineation & Impact Study	Based on information from these two reports, WA Department of Ecolog agreed to surface clearance only (no subsurface) for the wetlands.
June- July 2016	Proposed Plan	Navy proposed a Preferred Remedy for removal of MPPEH. Open House was held at Greenbank Farm on 11 July 2016.

LHTR Current and Future Actions



Current Actions

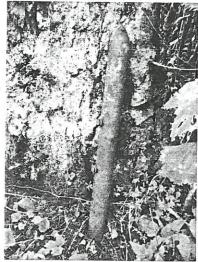
ROD

Draft ROD review

Biological Assessment Completed in 2013 (In-house) as part of 106 Consultation; being updated for 2016.

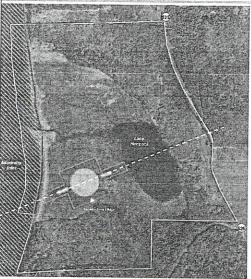
Future Actions

Remedial Design/Action Funding requested for FY2017-2019.



Proposed Remedy Former Lake Hancock Target Range





Remedial Action Objectives -

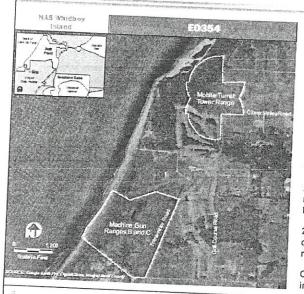
- Prevent and/or reduce the potential for receptors to come in direct contact with MEC/MPPEH items.
- 2. Minimize impacts to wetlands and other resources.

Proposed Remedy -

- 1. Surface Removal Only (within green outlined
- 2. Land use controls
 - A. Annual inspections around target area;
 - B. Five-year inspections within the entire removal action area;
 - C. Maintain perimeter fence and signage.

Aviation Fleet Gunnery School





Location: SW corner of Ault Field

Identified Contaminants: Lead, PAHs

Two machine gun ranges, a rifle range, a skeet range, a trap range, two special trap ranges, a mobile turret tower range, and a 20-mm range.

2007 - Preliminary Assessment recommended site investigation for Machine Gun Ranges B and C, and for the Mobile Turret Tower Range.

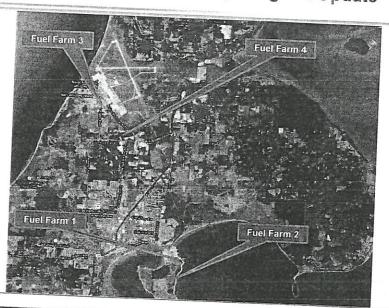
2009 - Site Investigation found no munitions constituents above cleanup levels.

2010 - EPA concurred with no further cleanup with land use limited to non-residential uses.

CURRENT STATUS: Land Use Controls in place to prevent residential use.

Petroleum/MTCA Cleanup Program Update





Petroleum/MTCA Cleanup Program Update



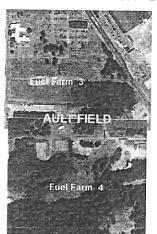
Work Completed Since February 2015

- 2014-2015 GW LTM/O reported in February 2016
- Well Decommissioning 20 wells @ FF1, FF2, & FF4
- 2015-2016 GW LTM/O completed in July 2016



Future Work Planned

- 2016-2017 GW LTM/O
- 3rd Five Year Review FY2017-2018

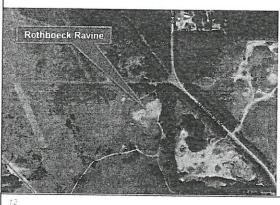


Rothboeck Ravine

Soil and Groundwater Investigation



- Historically, area was used for disposal of excess soil (fill) and inert solid waste generated during on-base construction projects.
 - No identified impacts. Source of fill material placed in ravine was never documented prior to emplacement.
- 2015 Investigation was to evaluate the presence or absence of impacts to soil and/or groundwater.

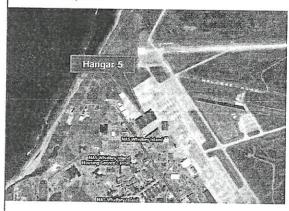


- 36 soil samples analyzed for VOCs, SVOCs, PCBs, Metals, DRO, and GRO
 - No detections above MTCA Method A / MTCA Method B cleanup levels or local background concentrations
- 3 groundwater samples analyzed for VOCs, SVOCs, Metals, DRO/RRO, GRO, and VPH
 - No detections above MCLs/ MTCA Method A / MTCA Method B groundwater cleanup levels or local background concentrations

Hangar 5 Soil and Groundwater Investigation



- 2015 Investigation was to evaluate the potential of soil vapor intrusion into Hangar 5.
 - 2012 flight line repair north of Hangar 5 encountered soils with "significant vapors."



- 11 soil samples analyzed for VOCs, SVOCs, Metals, DRO/RRO, GRO, and EPH/VPH
 - No detections above MCLs/ MTCA Method A / MTCA Method B groundwater cleanup levels local background concentrations, except one GRO detection at 180mg/kg (versus 100mg/kg Method A)
- 3 groundwater samples analyzed for VOCs, SVOCs, Metals, DRO/RRO, GRO, and VPH
 - No detections above MCLs/ MTCA Method A / MTCA Method B groundwater cleanup levels local background concentrations

Area 6
Progress Update



Current Actions:

- Final Focused Feasibility Study (FFS), Proposed Plan (PP) and Record of Decision (ROD) Amendment are concurrently being prepared.
- Schedule of Completion:
 - FFS End of August 2016
 - Proposed Plan Mid-November 2016
 - Public Meeting Mid-November 2016
 - ROD Amendment End of February 2017

Area 6 Nature of Off-site Plume



Consensus achieved during 3 November 2015 Meeting with EPA on the following items:

- All agree that there may be an unknown associated with who contributes to the offsite plume in addition to the Navy.
- The extent of the plume beyond Well 6-DW-38 is not well defined and may extend beyond the furthest downgradient well.
- Additional investigation is warranted to better understand the source(s), and the nature and extent of the off-site plume.

The following items are still to be resolved:

- EPA firmly reiterated there position that the Navy is responsible because of Strict, Joint & Several Liability.
 - "Joint and Several: Parties who contribute to a site's pollution are each liable as if they
 alone polluted that site."
- Also stated that the Navy is welcome to do additional investigations but they must be <u>independent</u> of the remedy and <u>does not remove</u> the Navy's responsibility.

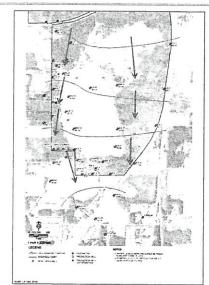
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Area 6 Conceptual Site Model

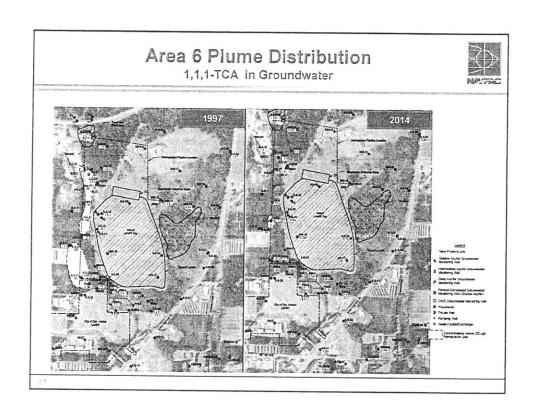


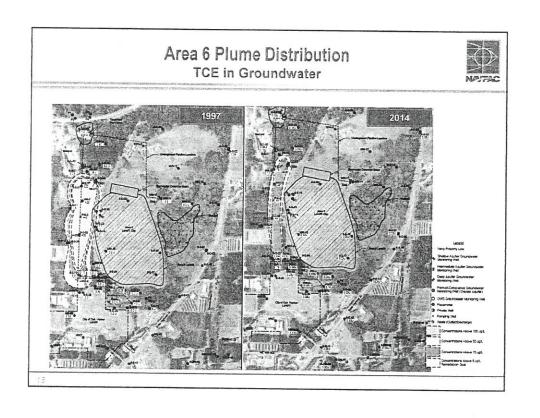
Groundwater Flow

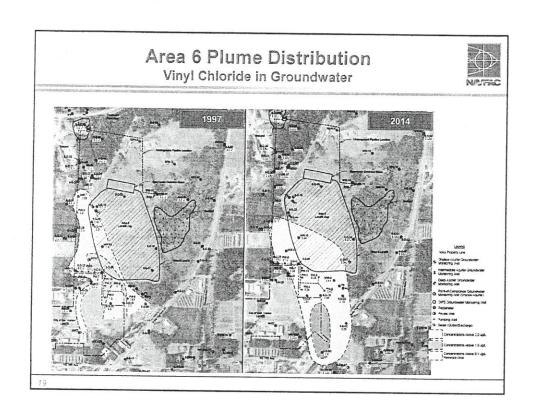
- Depth to groundwater is about 80 feet in source area and increases to 120 feet in downgradient area
- Groundwater flow is generally to the south

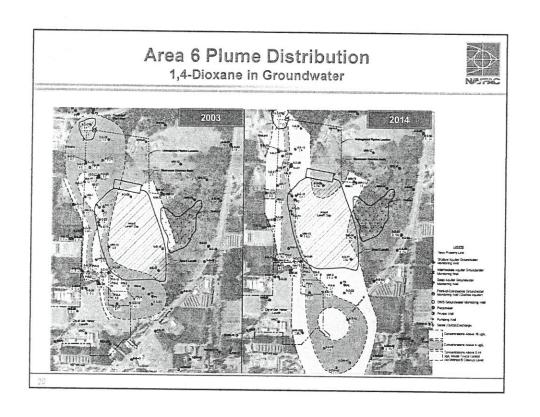


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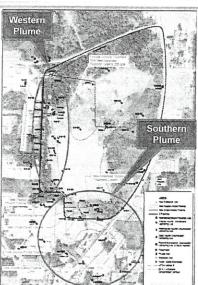


Area 6 Preferred Remedy



The Navy's and USEPA's Preferred Remedy includes:

- Refurbishing the existing treatment plant and installing a new plant along the southern boundary.
- Active P&T with additional extraction wells;
- Advanced oxidization treatment (hydrogen peroxide and ozone);
- Surface discharge of treated water (same as current system);
- EPA and Navy agree that groundwater modeling shows plume capture with this extraction network.



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Area 6 Preferred Remedy, continued



USEPA supports results of the Navy's groundwater models.

- Wells along SR20 will be able to capture the southern plume.
- Sufficiently estimate the extent of the plume beyond Well 6-DW-38 for the FFS.
- However, actual data must be used for the PP and ROD Amendment.

The PP and ROD Amendment will define the "integrated remedy" which includes:

- · Pump and treat (P&T)
- · Monitored natural attenuation (MNA)
- · Land use controls (LUCs)



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Area 6 Preferred Remedy, continued



One of three conditions must be met for active treatment endpoint:

- Concentrations throughout the plume reach 3 times the remedial goal (federal or state cleanup level); or
 - · Statistically determined
- System is operated for the time that the groundwater model predicted would reach 3 times the remedial goals; or
 - EPA and Navy agreed that the groundwater model adequately represented site conditions and predictions were valid.
- Concentrations of dissolved chemicals no longer decreases (asymptotic conditions).
 - · Statistically determined

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Area 6 Preferred Remedy, continued



Navy and EPA agreed that MNA must be part of the overall remedy.

No active treatment will be capable of reaching the cleanup goals, as it
is likely not economical and could be technically infeasible.

MNA cannot replace active treatment.

· MNA will be implemented at the end of active treatment.

EPA supports shutting off the treatment plants and moving directly to MNA once one of the endpoint condition is met.

As part of the MNA remedial design the Navy is:

- Evaluating and confirming the parameters (biological, chemical, physical, or mechanical) used to measure MNA.
- Performing a simple, hydrologic calculation for MNA with no other active treatment.

Area 6 Preferred Remedy, continued



Modify existing Land Use Controls:

- No use of groundwater in areas with concentrations greater than levels protective of human health and the environment.
- These restrictions may extend off-site. How far will be determined by Downgradient Well Survey (next slide)
- Navy will assist those property owners effected by these controls.

Removal of Land Use Controls:

- After achieving the remedial goals throughout the entire plume ("Point of Compliance" is entire plume).
- Navy and EPA support a statistical evaluation of the data to demonstrate that concentrations within the plume have reduced to the Remedial Goals.

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Area 6 Downgradient Well Survey



Still in the planning phase...

Samples will be collected from up to 14 properties.

Well owners will be contacted prior to sampling.

Results will be made available to the property owner after sampling has been completed.





Emerging Contaminants



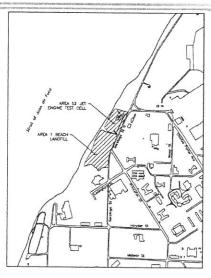
Per- and Polyfluoroalkyl substances (PFASs)

- May also be identified as PFCs (perfluorinated chemicals) or AFFF (aqueous film-forming foam). Perfluorocctanoic acid (PFOA) and perfluorocctane sulfonate (PFOS) have been the most extensively produced and studied.
- There are currently no established national primary drinking water regulations for PFOA and PFOS. EPA is evaluating PFOA and PFOS as drinking water contaminants using the process required by the Safe Drinking Water Act (SDWA).
- In 2009, EPA established Provisional Health Advisory (PHA) for PFOS and PFOA. For more information on this emerging contaminant, see www.epa.gov/pfas
- Historically, PFASs may have been used by the Navy to help fight fires at airfields and/or ships and other places where petroleum-product-based fires are a risk.
- The Navy is currently conducting an inventory of all sites where PFASs may have been used or stored. For additional information on the Navy's strategy for PFASs, see http://www.secnav.navy.mil/eie/oages/ofc-ofas.aspx

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Beach Landfill, Area 1 Shoreline Erosion Protection System Construction





- Record of Decision for Area 1
 Beach Landfill requires Land Use Controls to prevent human exposure to landfill contents.
- The western boundary of Areas 1 and 52 consists of an approx. 10 to 13-foot high shoreline bluff protected by a 1340 foot long seawall constructed in 2012.
- Seawall along Areas 1 and 52 functions to prevent exposure to landfill contents.

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Beach Landfill, Area 1 Shoreline Erosion Protection System Construction



- Repairs to the seawall in Area 52 were completed in January 2016 to repair storm damage.
- Bluff at the south end of Area 1 has eroded and landfill debris is visible.



Area 52 Repair Area - Looking South



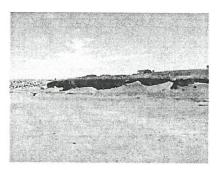
South End of Area 1 Beach Landfill Close-up Showing Landfill Debris

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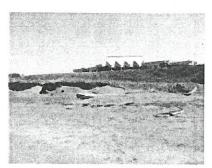
Beach Landfill, Area 1 Shoreline Erosion Protection System Construction



- The seawall in Area 1 will be extended south approximately 150 feet to isolate landfill material
- · Construction planned for January 2017



Area 1 Seawall Extension Area - Looking North



South End of Area 1 Looking East - Seawall Extension Area

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Hello Residents,

-- 1

I feel the need to respond to Ms. Maryon Attwood's letter to the Editor in the December 28 edition of the Whidbey News Times. Her letter's primary emphasis is on the Navy's draft Environmental Impact Statement (EIS), which is currently out for public comment. This is an important topic, and is of interest to many in the greater Coupeville community. However, the statement I want to address, one that seems to be included only for its emotional impact, is: "Today, we know that the worst is true – water is contaminated with a bad-acting fire-retardant chemical. In Coupeville's coffee shops and restaurants now, contaminated water is served..."

While I appreciate Ms. Atwood's passion, this type of intentional distortion has no place in a reasonable discussion. Clearly, it was meant only to instigate fear and panic in the community and was apparently written without regard to its emotional or economic effect. While the protection and future of our water supplies is of critical importance, it must be addressed using the best, most current, information available and without resorting to fearmongering.

Here are the FACTS

- Military Bases all over the Nation as well as civilian Fire Departments have used a fire fighting foam called AFFF. This foam was developed to put out petroleum fires, such as you would have with an airplane crash.
- This foam contains many chemicals, but two in particular are Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonate (PFOS). These compounds do not easily break down in the environment or the human body. They have a cumulative effect.
- These compounds are not currently regulated by the Department of Health, meaning, public and private water systems are not required to test for them.
- Recently, the Environmental Protection Agency (EPA) set lifetime health advisory levels
 for these two compounds at 70 parts per trillion (ppt). This is intended to be a safe and
 protective level against adverse health effects if you consume water, at this level or
 below, for an entire lifetime.
- Military bases around the country have started testing for these compounds. Here on Whidbey Island, this means the Navy is providing free testing for all wells within a one mile radius of their airfields.
- So far, the Navy has received results on 100 test samples of private wells. Six wells in the
 OLF Coupeville area and one near Ault Field have come back above the EPA's lifetime
 advisory level. These homeowners have been provided temporary drinking water until a
 permanent solution can be found.
- The Town of Coupeville uses four wells in the Keystone and Ft. Casey area. The water from all four is blended together before entering the Town's distribution system.

• The Town and the Navy have independently conducted tests on our wells, and at the point the water enters our distribution system. Three of the wells tested at the non-detect level for both compounds. The Keystone well tested at 59, 61 and 62 ppt for PFOA. At distribution, after the water is blended, it tested at 25, 27 and 38 ppt for PFOA. All of these results are below the EPA's lifetime advisory level.

. . .

- The Navy continues to provide free testing of private wells within the one mile radius of the airstrips. If you have not gotten your well tested, and would like to, call 360-396-1030 to make an appointment.
- The Navy is drilling groundwater monitoring wells to help Island County understand the
 movement of ground water in the area. More testing of private wells is needed. We are
 still in the information gathering stage. More information is needed to fully understand
 the extent of the problem and determine solutions.

People with different agendas are carelessly using the word 'contaminated' with reference to drinking water. Technically, the definition of contaminated is: making something impure by exposure to or addition of a poisonous or polluting substance. Water can be contaminated by many different sources; naturally occurring geological factors, animals, agriculture, and manmade substances. However, I think when people hear "contaminated water is served" they believe it to be unsafe to drink. With the facts we have right now, I do not believe that is the case with the Town of Coupeville's drinking water. According to the agencies charged with protecting public health, the Town's drinking water is safe.

You will hear people cite different countries and states who consider levels lower than 70 ppt to be unsafe. You will hear people claim to be 'experts' on PFOA and PFOS. Some people are holding public meetings, bringing in 'consultants' to talk about these compounds. I would remind you to question the information you are hearing. Just because we live in an age of instant information, does not make all people experts, or all sources credible, or all motives pure. Ask questions, be informed.

I do not claim to be an expert on safe drinking water. I have chosen to follow the advice, recommendations and requirements of the Environmental Protection Agency, the Agency for Toxic Substances and Disease Registry (a branch of the Center for Disease Control), the State Department of Health (DOH) and Island County Public Health. Using their guidelines, the Town of Coupeville's water is safe to drink. Do I wish our water was 100% free of all impurities? Yes. Do I think that is a realistic goal for water these days? No. Even though there may be some level of "contaminants" in drinking water, those levels may be such that they don't pose a threat to public health. And if the levels of any given "contaminant" exceed the water quality health standards set by the appropriate regulatory authorities, we would treat the water to reduce the level of "contaminant" so that it meets those water quality health standards.

I don't want to give the impression that this is not an important issue, it is. Safe drinking water is vital to the health and well-being of any community. I also understand this is just the beginning of the story. The EPA could lower their lifetime advisory threshold. The DOH could decide to regulate these compounds. We need more information on private wells and ground water movement. We need to take care of the individual homeowners with effected wells. We will continue to test the Town wells out of an abundance of caution. We will be vigilant and aggressive in our responsibility to provide the Town of Coupeville with safe drinking water. We will continue to be completely transparent as new issues arise and new information is received.

What's my bottom line on this subject? Don't panic. Don't make careless comments that can cause fear and distrust among your neighbors. Don't call into question the safety of our drinking water because you are trying to fortify your comments on the EIS. Don't thoughtlessly make a comment about Coupeville's coffee houses and restaurants that could affect their business. Please, please, act and speak responsibly.

And the absolute bottom line...The Town of Coupeville's water is safe to drink.

I am always available and happy to answer questions about our drinking water or any other subject. You can find me in Town Hall...or a local coffee shop...or one of our many wonderful restaurants.

Molly Hughes Mayor

. . + '

Handling of calls regarding PFAS, Coupeville and the Navy

Calls regarding the navy's sampling efforts (when, where, why not my well?):

Navy Representatives 360-396-1030 PAO feedback@navy.mil

Calls regarding health effects of PFOA, PFOS (collectively PFAS or PFCs):

Elizabeth Allen, US EPA 206-553-1807 Allen.Elizabeth@epamail.epa.gov

Rhonda Kaetzel, ATSDR 206-553-0530 KAETZEL.RHONDA@epa.gov

Calls regarding the sample results for the Town of Coupeville's wells:

Molly Hughes, Mayor of Coupeville 678-4461 mayor@townofcoupeville.org

Carolyne Cox, WA State Dept. of Health (360) 236-3162 carolyn.cox@doh.wa.gov

Calls regarding wells (depths, locations, aquifers):

Doug Kelly, ICPH 678-7885 D.Kelly@co.island.wa.us

Some web resources that people could be directed to:

 $\underline{\mathsf{USN}\;\mathsf{Site}\;\mathsf{Related}\;\mathsf{to}\;\mathsf{NAS}\;\mathsf{Whidbey}\;\mathsf{PFAS}\;\mathsf{Investigation}}\;\;\mathsf{(includes\;\mathsf{fact}\;\mathsf{sheets}\;\mathsf{with}\;\mathsf{sampling}\;\mathsf{area}\;\mathsf{maps)}$

USN Site Discusses PFC/PFAS in general

EPA Site Discusses PFAS's

CDC/ATSDR Site Discusses Health Effects of PFAS's

Keith Higman

reci /26/17
asport of PR

From:

Doug Kelly

Sent:

Thursday, October 27, 2016 2:26 PM

To:

Keith Higman; Jill Wood; Andrea Krohn

Subject: Attachments: FW: Priority 1 PFC Off-base SAP - Whidbey Island, OLF Coupeville - review by 11/3

OLF Coupeville_Drinking_Water_Draft PFC UFP-SAP_10262016.pdf

Importance:

High

----Original Message----

From: Leibman, Kendra R CIV NAVFAC NW, EV32 [mailto:kendra.leibman@navy.mil]

Sent: Thursday, October 27, 2016 2:25 PM

To: Einan, Dave; steve.hulsman@doh.wa.gov; Kaetzel, Rhonda; Doug Kelly

Subject: Priority 1 PFC Off-base SAP - Whidbey Island, OLF Coupeville - review by 11/3

Importance: High

Good afternoon,

Attached is the Draft SAP for the off-base drinking water sampling effort near OLF Coupeville. NOTE: The approach for off-base sampling near OLF was revised based on detect of PFOA in the drinking water well at Building 2807 (4x less than the LHA, at depth = 176ft) (information received as part of recent expanded UCMR 3 sampling effort).

I would greatly appreciate any feedback you have by 11/3. I apologize for the short review time, especially given that our Risk Comm Meetings are on 11/2+3.

Other Updates:

- -The team is working on responses to your comments on the Draft SAP for off-base sampling near Ault Field. They will be sent shortly.
- -A third SAP will be out early next week for the on-base groundwater sampling effort at OLF Coupeville (target = 10/31).
- -The Draft Comm Plan (including background, talking points, factsheets and letters) will be submitted for your review tomorrow, 10/28. Please bring your comments on these materials to the risk comm meetings on 11/2+3. I am available to discuss sooner, but it is important that your concerns are vetted to the entire team (which includes you).

Please let me know if you have any questions as you review.

Thank you, Kendra

Kendra Leibman, P.E. Remedial Project Manager

NAVFAC NW 1101 Tautog Circle, Suite 203 Silverdale, WA 98315-1101

(O) 360-396-0022

(C) 509-999-6843

(F) 360-396-0857

kendra.leibman@navy.mil



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WIHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

FYI

5726 Ser N46/2582 December 14, 2016

Mr. and Mrs. Michael Millenbach 1023 Keystone Hill Rd Coupeville, WA 98239

Dear Mr. and Mrs. Millenbach:

Subj: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

The initial results from your drinking water samplings for per- and polyfluoroalkyl substances (PFAS) included perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA) are above the Environmental Protection Agency's (EPA's) Lifetime Health Advisory (LHA). As promised in our earlier letter, we are providing you with an initial delivery of drinking and cooking water and would like to work with you to ensure future deliveries occur in a manner that works best for you.

The specific test results of the drinking water sampling preformed at your residence are provided in Enclosures 1, 2 and 3. Please note that these are initial results, which still need to be validated. The validation process can take several weeks, however, we are providing you with drinking and cooking water based on this initial data. We will provide you a copy of the validated results once received and update you on any changes necessary.

The health and safety of our neighbors are my top priority, which is why the Navy developed a protective policy to address past releases of Aqueous Film Forming Foam (also known as firefighting foam) (AFFF) containing PFAS. PFAS are unregulated or "emerging" contaminants, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements.

In May 2016, the EPA developed a LHA for two PFAS compounds, specifically PFOS and PFOA. According to the EPA, health advisory levels are not regulatory standards. They are health-based concentrations which should offer a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOS and PFOA in drinking water. The EPA heath advisory level for lifetime exposure is 70 parts per trillion (ppt) for PFOS and 70 ppt for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should not exceed 70 ppt.

The Navy will continue working closely with Region 10 U.S. EPA, Agency for Toxic Substances and Disease Registry, State of Washington Department of Health, and Island County Public Health to develop a long-term solution. In the interim, we will continue to supply you with an alternate source of drinking and cooking water until a long term solution is established. I am committed to the health and safety of all neighbors in our community and will keep you updated on this issue.

5726 Ser N46/2582 December 14, 2016

Below are links to sites that will provide additional detail and background information:

EPA Fact Sheet about the PFOS and PFOA health advisory levels: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos, and

Naval Facilities Engineering Command Northwest update: http://go.usa.gov/xkMBc

We will host another public meeting in early 2017 to share a summary of the drinking water investigation results and any plans for additional sampling. No specific results will be shared with the general public. You will receive an email or phone call of this meeting a minimum of one week before it is held.

Thank you for your cooperation as we work to ensure that human health and the environment are protected. I understand that you may have additional questions regarding the Navy's actions and what this means to you. Please contact the Navy's Public Affairs Officer Leslie Yuenger at (360) 396-6387 or by email at PAO_feedback@navy.mil.

Sincerely,

G. d. MOORE

Captain, U.S. Navy Commanding Officer

Enclosures:

- 1. Summary of results
- 2. Laboratory results
- 3. Explanation of laboratory abbreviations

Mr. Micheal Millenbach 1023 Keystone Hill Road WI-CV-2RW06-1116

Date Collected: 11/29/16 Time Collected: 10:08

Below are the preliminary, unvalidated test results for the November 29, 2016 sample of your drinking water. These initial results indicate that your drinking water sample exceeds U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). The Navy will deliver bottled water to your property at no cost to you, until a long term solution can be implemented. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory	
Chemical Name	Result (ppt)	(ppt)	
Perfluorooctane Sulfonate (PFOS)	8.9 U	70	
Perfluorooctanoic acid (PFOA)	230	70	
PFOS and PFOA (cumulative)	230	70	

Results for other PFAS where no EPA Health Advisory Levels have been established

	Dec 2016	II III SCENE COL
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS) ¹	100 U	NA

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento

Job No.: 320-23928-1

SDG No.:

Client Sample ID: WI-CV-2RW06-1116

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Sample wt/vol: 270.4(mL)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No.: 141294

Lab Sample ID: 320-23928-13

Lab File ID: 05DEC2016A6A 232.d

Date Collected: 11/29/2016 10:08

Date Extracted: 12/03/2016 12:19

Date Analyzed: 12/10/2016 11:17

Dilution Factor: 1

GC Column: Acquity

ID: 2.1(mm)

GPC Cleanup: (Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	UM	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.22	E	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q LIMITS
STL00993	13C2 PFHxA	105	70-130
STL00996	13C2 PFDA	115	70-130

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento

Job No.: 320-23928-1

SDG No.:

Client Sample ID: WI-CV-2RW06-1116 DL

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Sample wt/vol: 270.4(mL)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No.: 141294

Lab Sample ID: 320-23928-13 DL

Lab File ID: 05DEC2016A6A 233.d

Date Collected: 11/29/2016 10:08

Date Extracted: 12/03/2016 12:19

Date Analyzed: 12/10/2016 11:46

Dilution Factor: 2

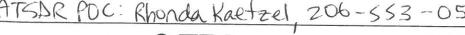
GC Column: Acquity ID: 2.1(mm)

GPC Cleanup:(Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.089	U	0.11	0.089	0.029
335-67-1	Perfluorooctanoic acid (PFOA)	0.23	D	0.055	0.044	0.017
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	0.26	0.20	0.088

CAS NO.	SURROGATE	%REC	Q .	LIMITS
STL00993	13C2 PFHxA	114		70-130
STL00996	13C2 PFDA	111		70-130





FACT SHEET PFOA & PFOS Drinking Water Health Advisories



EPA has established health advisories for PFOA and PFOS based on the agency's assessment of the latest peer-reviewed science to provide drinking water system operators, and state, tribal and local officials who have the primary responsibility for overseeing these systems, with information on the health risks of these chemicals, so they can take the appropriate actions to protect their residents. EPA is committed to supporting states and public water systems as they determine the appropriate steps to reduce exposure to PFOA and PFOS in drinking water. As science on health effects of these chemicals evolves, EPA will continue to evaluate new evidence.

Background on PFOA and PFOS

PFOA and PFOS are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). PFOA and PFOS have been the most extensively produced and studied of these chemicals. They have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes.

Because these chemicals have been used in an array of consumer products, most people have been exposed to them. Between 2000 and 2002, PFOS was voluntarily phased out of production in the U.S. by its primary manufacturer. In 2006, eight major companies voluntarily agreed to phase out their global production of PFOA and PFOA-related chemicals, although there are a limited number of ongoing uses. Scientists have found PFOA and PFOS in the blood of nearly all the people they tested, but these studies show that the levels of PFOA and PFOS in blood have been decreasing. While consumer products and food are a large source of exposure to these chemicals for most people, drinking water can be an additional source in the small percentage of communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example, an industrial facility where these chemicals were produced or used to manufacture other products or an airfield at which they were used for firefighting.

EPA's 2016 Lifetime Health Advisories

EPA develops health advisories to provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. In 2009, EPA published provisional health advisories for PFOA and PFOS based on the evidence available at that time. The science has evolved since then and EPA is now replacing the 2009 provisional advisories with new, lifetime health advisories.

FACT SHEET PFOA & PFOS Drinking Water Health Advisories

Recommended Actions for Drinking Water Systems, continued

Steps to Limit Exposure

A number of options are available to drinking water systems to lower concentrations of PFOA and PFOS in their drinking water supply. In some cases, drinking water systems can reduce concentrations of perfluoroalkyl substances, including PFOA and PFOS, by closing contaminated wells or changing rates of blending of water sources. Alternatively, public water systems can treat source water with activated carbon or high pressure membrane systems (e.g., reverse osmosis) to remove PFOA and PFOS from drinking water. These treatment systems are used by some public water systems today, but should be carefully designed and maintained to ensure that they are effective for treating PFOA and PFOS. In some communities, entities have provided bottled water to consumers while steps to reduce or remove PFOA or PFOS from drinking water or to establish a new water supply are completed.

Many home drinking water treatment units are certified by independent accredited third party organizations against American National Standards Institute (ANSI) standards to verify their contaminant removal claims. NSF International (NSF®) has developed a protocol for NSF/ANSI Standards 53 and 58 that establishes minimum requirements for materials, design and construction, and performance of point-of-use (POU) activated carbon drinking water treatment systems and reverse osmosis systems that are designed to reduce PFOA and PFOS in public water supplies. The protocol has been established to certify systems (e.g., home treatment systems) that meet the minimum requirements. The systems are evaluated for contaminant reduction by challenging them with an influent of 1.5±30% μg/L (total of both PFOA and PFOS) and must reduce this concentration by more than 95% to 0.07 μg/L or less (total of both PFOA and PFOS) throughout the manufacturer's stated life of the treatment system. Product certification to this protocol for testing home treatment systems verifies that devices effectively reduces PFOA and PFOS to acceptable levels.

Other Actions Relating to PFOA and PFOS

Between 2000 and 2002, PFOS was voluntarily phased out of production in the U.S. by its primary manufacturer, 3M. EPA also issued regulations to limit future manufacturing, including importation, of PFOS and its precursors, without first having EPA review the new use. A limited set of existing uses for PFOS (fire resistant aviation hydraulic fluids, photography and film products, photomicrolithography process to produce semiconductors, metal finishing and plating baths, component of an etchant) was excluded from these regulations because these uses were ongoing and alternatives were not available.

In 2006, EPA asked eight major companies to commit to working toward the elimination of their production and use of PFOA, and chemicals that degrade to PFOA, from emissions and products by the end of 2015. All eight companies have indicated that they have phased out PFOA, and chemicals that degrade to PFOA, from emissions and products by the end of 2015. Additionally, PFOA is included in EPA's proposed Toxic Substance Control Act's Significant New Use Rule (SNUR) issued in January 2015 which will ensure that EPA has an opportunity to review any efforts to reintroduce the chemical into the marketplace and take action, as necessary, to address potential concerns.

Where Can I Learn More?

- EPA's Drinking Water Health Advisories for PFOA and PFOS can be found at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos
- PFOA and PFOS data collected under EPA's Unregulated Contaminant Monitoring Rule are available: https://www.epa.gov/dwucmr/occurrence-data-unregulated-con taminant-monitoring-rule
- EPA's stewardship program for PFAS related to TSCA: <a href="https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/and-polyfluoroalkyl-substances-pfass-under-tsca/and-pfass-under-tsca/and-pfass-under-tsca/and-p
- EPA's research activities on PFASs can be found at: http://www.epa.gov/chemical-research/
 perfluorinated-chemical-pfc-research
- The Agency for Toxic Substances and Disease Registry's Perflourinated Chemicals and Your Health webpage at: http://www.atsdr.cdc.gov/PFC/



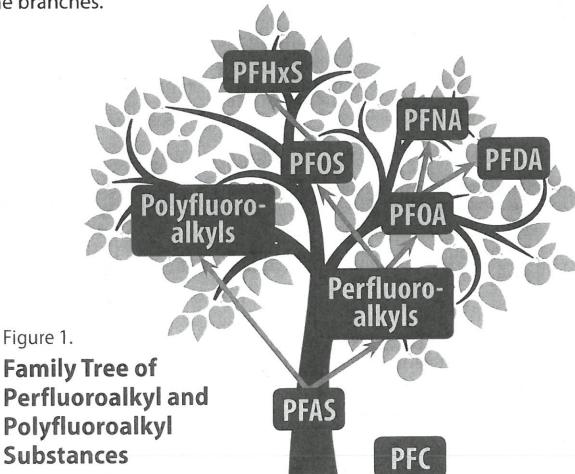
The family tree of perfluoroalkyl and polyfluoroalkyl substances (PFAS)

Names and abbreviations

This fact sheet tells you about chemical names within the family of perfluoroalkyl and polyfluoroalkyl substances (PFAS) and their basic chemical structure. It also spells out abbreviations for common PFAS.

PFAS are a family of man-made chemicals that contain carbon, fluorine, and other elements.

The family tree image below, Figure 1, shows some of the different families of PFAS. For simplicity, it does not include all PFAS subfamilies. Follow along starting at the "fallen apple" of PFC and then continuing up the tree trunk into the branches.



Agency for Toxic Substances and Disease Registry

Division of Community Health Investigations



Figure 1.

Sources of Exposure

Toxicokinetics and Normal Human Levels

Biomarkers/Environmental Levels

General Populations

- The major sources of exposure to perfluoroalkyls, especially perfluuorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), is contaminated food and drinking water.
- Industrial releases of perfluoroalkyls in ambient air or surface water may also be a source of exposure for the general population.
- The general population may also be exposed to PFOS from mill treated carpets and to PFOA from migration from paper packaging and wrapping into food and inhalation from impregnated clothes.

Occupational Populations

■ The production of perfluoroalkyl and use of perfluoroalkyl containing products are sources of occupational exposure.

Toxicokinetics

- Limited data indicate that perfluoroalkyls are absorbed from the respiratory tract. Studies in animals suggest that many perfluoroalkyls (including PFOA and PFOS) are almost completely absorbed from the gastrointestinal tract.
- "The available data suggest that perfluoroalkyls are not metabolized or undergo chemical reactions in the body.
- Perfluoroalkyls are primarily excreted in the urine.
- There are substantial differences in the elimination half-times across perfluoroalkyl compounds and animal species. The estimated elimination half-times for PFOA, PFOS, perfluorohexane sulfonic acid (PFHxS), perfluorobutane sulfonic acid, and perfluorobutyric acid in humans are 3.8 years, 5.4 years, 8.5 years, 665 hours, and 72 hours, respectively. Much shorter half-times have been estimated in experimental animals.

Normal Human Levels

- Perfluoroalkyls appear to be ubiquitous in human blood based on the widespread detection of these substances in human serum samples.
- Mean serum concentrations of PFOA and PFOS, and PFHxS in the U.S. were 3.07 and 9.32 ng/mL, respectively, PFHxS levels were <4 and other perfluoroalkyls were generally <1 ng/mL.

Biomarkers

Measurement of serum or whole blood perfluoroalkyl concentrations is the standard accepted biomarkers of exposure to perfluoroalkyls.

Environmental Levels

Air

■ Mean PFOA levels ranged from 1.54-15.2 pg/m³ in urban air samples in the U.S., Norway, and Japan. PFOS levels in ambient air are generally <5 pg/m³ and levels of other perfluoroalkyls are generally <1 pg/m³.

Water

Perfluoroalkyl levels in surface water samples are generally below 50 ng/L.

Soil

■ Background levels of perfluoroalkyls in soil and sediment have not been located.

Reference

Agency for Toxic Substances and Disease Registry (ATSDR). 2015. Toxicological Profile for Perfluoroalkyls (Draft for Public Comment). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

ToxGuideTM for Perfluoroalkyls

August 2015

U.S. Department of Health and Human Services Public Health Service Agency for Toxic Substances and Disease Registry

Contact Information:
Division of Toxicology
and Human Health Sciences

1600 Clifton Road NE, F-57 Adanta, G.N 30329-4027 1-800-CDC-INFO 1-800-232-4636 www.atsdr.edc.gov/toxpro2.html





DEPARTMENT OF THE NAVY

THE ASSISTANT SECRETARY OF THE NAVY (ENERGY, INSTALLATIONS AND ENVIRONMENT) 1000 NAVY PENTAGON WASHINGTON DC 20350-1000

SEP 3 0 2016

Ms. Tina M. O'Rourke Horsham Water & Sewer Authority 617 Horsham Road Horsham, PA 19044

Dear Ms. O'Rourke:

Thank you for your September 12, 2016 letter to Secretary Mabus concerning perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) impacting the drinking water supplies in Horsham township. I am responding on behalf of the Secretary of the Navy.

Our Navy staff has been working closely with your office over the past several years to address this important issue. As you note, the Navy is taking all appropriate actions to address both public and private drinking water sources contaminated with PFOS and PFOA above the Environmental Protection Agency (EPA) lifetime health advisory (LHA) levels in those areas where PFOS or PFOA originate on the former Naval Air Station Joint Reserve Base Willow Grove. We continue to coordinate these actions with EPA Region 3 and the Pennsylvania Department of Environmental Protection.

The Navy is funding the installation and operation of carbon filtration systems for public wells, as well as interim replacement water purchase for locations where public wells exceeded the EPA LHA levels and are currently offline. However, water with PFOS and PFOA below the EPA LHA levels is considered safe for all consumptive purposes. If the Horsham Water and Sewer Authority unilaterally chooses to take actions regarding water with PFOS and PFOA below these safe levels and pass those costs onto the consumers, those costs are not eligible for Navy funding. These funding authority issues were explained by the Deputy Assistant Secretary of Defense at the September 22, 2016 meeting you attended with Senator Casey. Also clarified at that meeting, was that the Air Force is not treating individual wells with PFOS or PFOA below the EPA LHA levels at former Pease Air Force base.

I assure you the Navy recognizes the importance of this matter and will continue being proactive to ensure the drinking water supplies impacted by Navy activities meet EPA LHA levels. The Navy remains committed to working cooperatively with all involved and will be open and transparent with the local community officials, the water authorities and impacted community members.

Sincerely,

OCT 4 2016

HORSHAM WATER AND SEWER AUTHORITY Jennifer Mustain Acting

HORSHAM WATER AND SEWER AUTHORITY (HWSA) PFC SURCHARGE FREQUENTLY ASKED QUESTIONS (FAQs)

Why do the residents have to pay this surcharge? The Authority shares its customers' concern that the new PFC surcharge had to be implemented. Unfortunately, this action was made necessary by the now well-publicized advent of perfluorinated compound (PFC) contamination related to the military installations in our area. Five of the 14 groundwater wells supplying Horsham's public water system had PFC concentrations above the EPA combined lifetime health advisory (HA) of 70 ppt. The Navy is funding treatment systems for these 5 wells. Other sources of the public water supply include an additional 9 groundwater wells and 2 interconnections with neighboring suppliers, Aqua PA and the Forest Park Water Treatment Facility via the North Wales Water Authority (NWWA). PFCs have been detected in all of these sources except the water originating from Forest Park. Although these detected levels have been below the EPA HA, they are certainly of concern to the Authority and Horsham Council on behalf of Horsham residents.

In light of that concern, a short term plan to reduce the average concentration of PFOS and PFOA in the public water system was presented and adopted at a joint public meeting between the Authority Board and Horsham Township Council on June 26, 2016. After a presentation by the Authority of five options and hearing comments and concerns raised by the residents, Council and the Authority Board voted to adopt a plan that involves completing the Navy-funded treatment system work at the wells as noted above, then actively managing the use of remaining wells vs. purchasing additional water from Forest Park to further reduce PFC concentrations in Horsham's public supply with the goal of achieving an average concentration of less than 1 ppt in the public drinking water supply. Because purchasing water costs significantly more than producing it from our own wells, the surcharge is necessary primarily to cover this additional purchased water cost, which is not currently reimbursable by the military.

Why is the military not paying for this cost? The Authority recognizes that the residents did not create this problem, and together with Horsham Township are actively advocating that the military fund all costs associated with the PFC contamination so that residents do not have to bear any of the costs. The Authority has entered into Cooperative Agreements with both the Department of the Navy (Navy) and the National Guard Bureau (NGB) which collectively provide funding for the installation of treatment systems on the five public supply wells as described above, operation of those treatment systems to remove PFCs to the 70 ppt HA level, as well as public water connections for over 90 properties with private wells with PFC concentrations exceeding the HA. However, according to the military, the government is not authorized to fund any actions designed to reduce PFC concentrations below the EPA health advisory, a step that both the Authority and Horsham Council felt was necessary in order to make the public water supply as protective as possible of Township residents while the science regarding these contaminants continues to emerge. The Authority has made multiple funding requests of the Department of Defense, Navy, Air Force and National Guard Bureau, and continues to work with state and federal officials toward this end. These efforts will continue, and public participation is encouraged and welcomed.

HWSA PFC Surcharge FAQs Page 2

Why has the Authority adopted a short term plan to further reduce PFC concentrations and thus created a need for a surcharge when the EPA has adopted a lifetime health advisory of 70 ppt? Out of an abundance of caution, in light of concerns as to the evolving nature of the science regarding PFC contamination in drinking water and the chronic, historic consumption in our community in particular, we developed the short term plan as described above. This plan was overwhelmingly supported by the public in attendance at the meeting when the plan was presented. However, the short term plan carries additional costs which are not currently being reimbursed by the military and the military will only fund projects designed to meet the EPA health advisory or other future standards.

Were the residents ever informed of a potential cost to be imposed upon them? Costs of the short term plan, and the fact that those costs are not currently reimbursable, were presented at the June 26, 2017 meeting. The presentation from that meeting is also on Horsham Township and HWSA's websites. A direct mailer was also issued to all public water customers on September 2, 2016.

Didn't the Authority just receive \$10 million in funding from the State and why is that not being used to cover the surcharge? Legislation passed as part of the 2016-2017 state budget process allocates \$10 million in grant funding for projects that install infrastructure to ensure clean drinking water in Horsham after an application and approval process through Pennvest. In accordance with the prescribed deadline, the Pennvest application was completed and submitted to Pennvest on November 1, 2016 for consideration in early 2017. This funding is designated for costs associated only with physical infrastructure. Operating costs, such as carbon change-out, are excluded from eligibility under this funding. The Authority anticipates utilizing these funds to install permanent treatment systems at the interconnection with Aqua, as well as at 5 of the 9 additional public supply wells mentioned above, a new 1.0 million gallon storage tank, an additional interconnection with NWWA, and construction of approximately 2 miles of water mains to make public water service available to properties with private wells with PFC concentrations below the 70 ppt HA. Without this funding, the Authority has estimated that the proposed capital improvements would necessitate at least a 50% increase in water rates.

Will there be any additional funding? HWSA and Horsham Township are actively advocating for funding so that our residents do not have to bear the additional costs associated with removing PFCs below the HA. We believe that if uniform and statewide standards are adopted that scientifically supports a lower level than the EPA HA, the military may expand funding to achieve such Pennsylvania standards. Therefore, we support state and federal efforts to impose a lower regulatory limit for PFCs in drinking water.

HWSA PFC Surcharge FAQs Page 3

How is this surcharge calculated? The surcharge is proportioned based on the capacity in the water system allocated to each connection. A connection served by a 5/8" water meter represents a single unit of water capacity and is accordingly charged the base surcharge. Nearly all residential properties are served by a 5/8" meter. Larger meter sizes which typically serve commercial properties are allocated multiple units of capacity. For example, a 1" meter is allocated 2 units of capacity, a 1 ½" meter, 5 units of capacity, and so on. Properties served by larger meters are charged the base surcharge times the respective units of capacity allocated to the property. Therefore, while the surcharge is not based specifically on the number of gallons used, the size of the meter serving each connection is the means by which the proportionate share of the costs is allocated among all users of the system.

Will this surcharge be separate and broken down on my bill? Yes, this will be reflected on your bill as a single line item, which will be located above the water section of your bill.

What is this money used for? To support the costs of reducing the average concentration of PFCs in the public water supply below 70 ppt. Such costs are not currently being funded by any outside revenue source.

How long will the surcharge be in effect? We anticipate that the surcharge will be in effect for as long as the short term plan is in effect. This is currently estimated for a period of up to 3 years. Unreimbursed costs of implementing a long term plan to address the PFC contamination will be built into future rate adjustments.

If the Authority gets reimbursed for the costs that make up the surcharge, will I get my money back? If all of the costs which make up the surcharge are reimbursed to the Authority, the surcharge will be "paid back", most likely through credits on future billings. If partial reimbursement of costs is received, the amount of the reimbursement will be proportioned back to our customers in the same proportion on which they were paid.

Besides this surcharge, are my rates also going to go up? The Authority is a non-profit organization. Accordingly, the Authority does not generate profits from the fees charged for our services, or from the new surcharge. Rates are calculated to meet the Authority's routine operating and capital costs and therefore will continue to be adjusted as necessary.

Will updates be provided as to how this money is being used? Yes, we anticipate providing a quarterly accounting of the PFC related costs which will be posted on our website.

To be sure you are receiving all communication and updates regarding your drinking water, be sure to sign up for Horsham Township's email alerts. You can do so by sending an email to water@horsham.org and typing the word "SUBSCRIBE" in the subject line.

CITY OF PORTSMOUTH



PRESS RELEASE

FOR
IMMEDIATE
RELEASE

April 8, 2016

Portsmouth Signs Agreement with Air Force to Proceed with Pease Tradeport Well Treatment System Project

PORTSMOUTH, NH – The City of Portsmouth, the Pease Development Authority (PDA) and the United States Air Force are pleased to announce the execution of an agreement to enable an upgrade of the Pease Tradeport water treatment system in order to remove perfluorochemical compounds (PFCs) from water supplied by the Smith, Harrison and Haven Wells.

In May of 2014, PFCs, which are considered contaminants of emerging concern, were discovered in the three drinking water supply wells located on and servicing the Pease Tradeport. Operated by the City of Portsmouth, the Haven Well was taken off-line immediately due to the PFC levels exceeding provisional health advisory levels; the Harrison and Smith Wells, with the approval of regulators, have remained on line as PFC levels were substantially below provisional health advisory guidelines.

"We are pleased to have reached an agreement that will allow the City to move forward with the installation of carbon filters for the Harrison and Smith Wells, and the eventual design of treatment for the Haven Well, a source of water supply that has been off-line for nearly two years," said Portsmouth City Manager John Bohenko. "The City has pushed for treatment of all Wells since the contamination was first

discovered, and is committed to providing a safe and adequate supply of drinking water to the Pease tenants. I want to thank the Air Force for their cooperation, our Congressional Delegation, and especially Senators Shaheen and Ayotte for their continued assistance in finding a resolution. It is great news for us to be able to move forward with this project."

Deputy Director of Public Works Brian Goetz commented that "this agreement will get treatment on-line for the operating Harrison and Smith Wells to allow for demonstration of the technology and performance analysis of the system. This information will help our consultant revise the final design parameters for treatment of the Haven Well. We anticipate having the filters in place and operational within six months. Design of the Haven treatment will follow after that. Portsmouth also continues to support the goals of the EPA and DES with regard to aquifer restoration; our work will continue to be in parallel with the work that the Air Force is undertaking to satisfy the EPA's administrative order."

This agreement includes the Air Force's reimbursement to the City for up to \$58,700 for the system piloting and \$831,000 for the filter installation and demonstration project. Additional agreements between the City and the Air Force for design and construction of the Haven Well treatment system are anticipated to be negotiated later in the year.

Questions can be directed to Brian Goetz, Deputy Director of Public Works, at 603-766-1420.



MVD PFC Progress Report and Next Steps

May 26, 2016

Dear MVD Customer/Resident,

As you are no doubt aware, low concentrations of certain perfluorinated chemicals (PFC's) have been detected in the Merrimack Village District (MVD) water system. The MVD is served by groundwater pumped from six (6) wells in sand and gravel deposits. The source of these PFC's is most likely airborne contamination originating from an industry in the northeast portion of Merrimack. The contaminants are then carried by precipitation or runoff into our aquifers. The primary contaminant is perflourocotanoic acid or PFOA. Lower concentrations of perfluorocotane sulfonate (PFOS) have also been found.

PFC's are extremely stable manmade compounds used in the manufacture of non-stick coatings on pots and pans, water resistant clothing, stain resistant carpets, food packaging and a variety of other household and commercial products. Their stability makes them very persistent in the environment. For more information on PFC's please visit the New Hampshire Department of Environmental Services (DES) website and specifically the "Frequently Asked Questions" section.

The US Environmental Protection Agency (EPA) has just (5/19/16) released a new lifetime health advisory level (HA) of 70 parts per trillion (ppt) for PFOA, PFOS and if they co-occur, the sum of PFOA and PFOS concentrations. Prior to this, the only guidance was establishment of a Provisional Health Advisory (PHA) level of 400 ppt for PFOA and 200 ppt for PFOS for short term acute contact. Due to the increasing occurrence of PFOA and the lack of a federal standard, individual states and/or EPA regions have been setting their own PFOA drinking water standards. EPA Region 2 in New York set an Advisory Level of 100 ppt in connection with drinking water contamination in Hoosick Falls, NY. The State of Maine established a standard of 100 ppt for PFOA in drinking water based on analysis of peer reviewed literature. Based on the NY and ME standards, NHDES had established 100 ppt as the interim level at which they recommend people use bottled water for drinking, cooking and brushing their teeth. Given the new PFOA HA set by EPA, NHDES will be lowering the 100 ppt threshold to 70 ppt.

What Lead to the Current Situation?

PFOA was first detected in MVD well water in 2014 as part of sampling and analysis for the Unregulated Contaminant Monitoring Rule (UCMR). The EPA uses this data to monitor the occurrence of contaminants that are not regulated under the National Primary Drinking Water Regulations, are known or anticipated to occur in public water systems, and which may require regulation. On re-sampling PFOA was below detection in four of the six wells. The data from 2014 and 2015 (in ppt) is summarized in the table on the following page. Note that blanks indicate no sample taken. Given that this was an unregulated contaminant and results were either non-detect or well below the 400 ppt PHA, no action was required.

In late February of 2016, the industry referenced above, which is served by the MVD, notified NHDES of the detection of PFOA at about 30 ppt at four of their interior faucets. This testing was done due to detection of PFOA in water supplies in Hoosick Falls, NY and North Bennington, VT; both of which are near other facilities of the same company. In response, on March 9, 2016 NHDES collected samples from the three operational MVD wells (#2, #4 & #5). The other three wells were off line for scheduled maintenance (#3) or construction activity (#7 & #8). Concentrations ranged from 17 ppt in Well #2 to to 90 ppt in Well #4.

PFOA Concentrations (ppt or ng/L) in MVD Wells 2014-2015

Sample Date	Well #2	Well #3	Well #4	Well #5	Well #7	Well #8
4/14/14	15		42*	42*		
4/22/14		BDL				
7/14/14					26*	26*
10/7/14	BDL	BDL	BDL*	BDL*		
6/15/15					20*	20*

^{*}Blended sample (Wells 4&5 or 7&8)

BDL - Below Detection Limit

What Actions Have We Been Taking?

- At their March 21, 2016 meeting the Board of Commissioners authorized our engineering consultant to evaluate both temporary and permanent treatment options for the removal of PFOA from MVD water should this become necessary. The results from this preliminary analysis were presented at the May 16, 2016 Board meeting.
- MVD was represented and took part in public meetings arranged by NHDES in Merrimack and Bedford on March 23, 2016 and March 30, 2016 respectively.
- MVD met several times with the NHDES Commissioner and Division Heads to discuss, among other things, the industry's responsibility to pay for the significant costs that MVD has been incurring for staff time, sampling, analyses, consultants, and potentially in the future, for treatment, if required.
- MVD met with legal counsel and kept them current with on-going developments in the event that a legal remedy is required with the industry.
- MVD has their hydrogeologic consultant evaluating the PFOA contamination.
- MVD met with Senator Ayotte and had discussions with a representative of Senator Shaheen and urged both to apply pressure to EPA to set an enforceable drinking water standard for PFOA which protects the public health.
- Starting on March 31, 2016, MVD and NHDES began weekly PFOA testing of the operational MVD wells. This data can be viewed on the NHDES website under the "Sampling Maps and Data" section. Data can also be seen on water from the MVD system which enters Cabot Preserve, a system run by Pennichuck Water Works but supplied by MVD.
- MVD has been meeting system water demand using a combination of wells with the goal of minimizing the PFOA concentration entering the distribution system. On April 19, 2016, the Iron & Manganese Removal Facility being constructed for Wells #7 & #8 was sufficiently complete to allow use of these wells which have the lowest PFOA concentrations, and now the lowest iron and manganese concentrations. Since that date, system demand has been met primarily with these two wells. Based on recent testing, the concentration of PFOA entering the distribution system from Wells #7 & #8 was 18 ppt and 16 ppt on 4/14/16 and 4/21/16 respectively. As

demands increase going into the summer months, MVD will turn on additional wells as needed to meet demand.

What Actions Will We Take Going Forward?

- MVD will continue to minimize the PFOA entering the distribution system by utilizing the wells with the lowest concentrations.
- MVD will continue weekly sampling of its wells for PFOA.
- MVD will assess levels of PFOA and PFOS in each well to see if treatment is required given the 70 ppt HA level. Based on analysis of results to date, MVD is anticipating that treatment will be required for Wells #4 & #5 but not at the other wells. MVD will work with its consultants to select and design the most appropriate treatment technique for any well where treatment is deemed necessary.
- MVD, either through NHDES's actions, or its own legal remedy, will seek all costs associated with the PFOA contamination or treatment to be paid by the subject industry.
- If needed, MVD will work with Pennichuck Water Works (PWW) to supply supplemental water during design and construction of a treatment plant for Wells #4 & #5 through an existing system interconnection.

We have provided links below for your use in accessing additional information. MVD has always been committed to providing its customers with safe clean drinking water and this commitment continues unabated. Please contact us with any questions or concerns.

MVD Website

http://www.mvdwater.org/

NHDES Website

http://des.nh.gov/organization/commissioner/pfoa.htm

EPA Website

https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/perfluorooctanoic-acid-pfoa-perfluorooctyl-sulfonate

Sincerely yours,

Board of Water Commissioners Merrimack Village District

Merrimack Village District Water Works

2 Greens Pond Road Merrimack, NH 03054 Phone: (603) 424-9241

Mission Statement
"The Merrimack Village District will
develop, operate and maintain our water
system in a cost effective manner."
Adopted by the

Board of Commissioners

September 16, 2013

To view PFOA information and results click here: http://des.nh.gov/organization/commissioner/pfoa.htm

May 26, 2016: MVD PFC Progress Report and Next Steps > read more

PFOA and Wells 4 and 5 update

-13-16

- Saint Gobain has signed the agreement to fund the preliminary design of a permanent treatment plant for wells 4 and 5. The additional testing that Saint Gobain had requested is partially completed and the remainder will be finished up in January.
- The Pennichuck connection /Emergency booster station is underway and should be operational by mid-January.
 - CT Male notified the MVD that the temporary GAC filter unit used in Hoosick Falls is anticipated to be ready in mid-to-late January, and can be shipped to wells 4 and 5 for use while the permanent plant is constructed.
- were sent out only 64 residents showed any interest and less than 10 have actually participated in the blood draw as DHHS is sending out another 500+ letters to MVD customers offering blood testing. Of the original 200 letters that of 12-13-16.

Quick Links

Flushing Schedule

- May 8 12, 2017
- April 24-28, 2017
- April 17 21, 2017

Approved Budget for Staff-BOC 17-18

Projected Revenue 2006-2018

What is the odd/even water restriction?

The water restriction is a tool to help manage our distribution system. Withdrawing water from the aquifer in a controlled manner allows us to protect against seasonal fluctuations. The year round odd/even restriction limits the days on which outside watering is allowed, based on whether your street address is an odd or even number and the date is an odd or even.

5/16/17, 8:20 AM 2 of 3

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Treatment Plant Environmental Review

2016 Annual Report

2016 CCR Report

MVD's 2011 By-laws

INFORMATION ABOUT THE PROPOSED TENNESSEE GAS PIPELINE VIA THE NASHUA REIGONAL PLANNING COMMISSION'S WEBSITE

ATTENTION: Homeowners, Contractors and Utilities Co.

BEFORE YOU DIG.

MVD is NOT a member of the Dig Safe

System

Please fill out the online form for every

location. If an EMERGENCY please call

603 - 424 - 9241 x100

Please Note: The Merrimack Village District Water Works has NO job openings at this time.

Merrimack Village District Water Works

2 Greens Pond Road Merrimack, NH 03054 Phone: (603) 424-9241

Fax: (603) 424-0563

Office Hours: Monday - Friday / 8:00am - 4:30pm

Site Map | Disclaimer

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5/16/17, 8:20 AM

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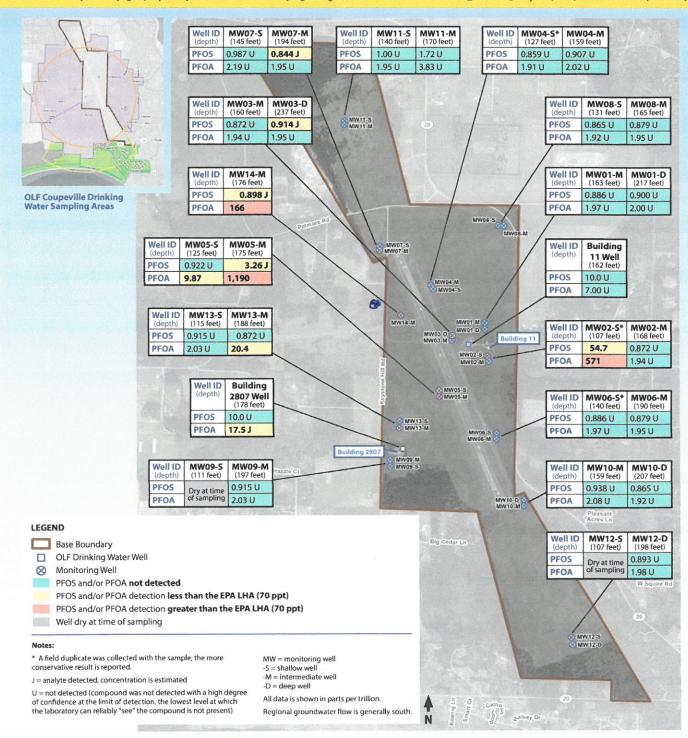




OLF Coupeville Site Inspection

Additional information can be found online at www.secnav.navy.mil/ele/pages/pfc-pfas.aspx For updates as more information becomes available, visit http://go.usa.gov/xkMBc

If you have specific questions, please contact PAO_feedback@navy.mil (email) or 360-396-1030 (voicemail)



AFFF aqueous film forming foam **EPA**

U.S. Environmental Protection Agency

LHA lifetime health advisory

OLF PFAS **Outlying Landing Field**

per- and polyfluoroalkyl substances

perfluorooctanoic acid

PFOS ppt

perfluorooctane sulfonate parts per trillion



island County Parcel Viewer Map Export DO NOT USE AS A LEGAL DOCUMENT, ACCURACY NOT GUARANTEED

September 19, 2017

OPEN LETTER TO: Geri Forbes, Chief Executive Officer, Whidbey Health

Whidbey General Hospital Board of Commissioners

RE: WGH's PFC Contaminated Water

I appeared before the Whidbey Health's (WH) Board of Commissioners at its April 10, 2017 meeting with information and requests concerning the need for a filtration system to remove perfluorinated chemicals (PFCs) that leaked from the Navy's Outlying Field to contaminate the Town of Coupeville's water. I also presented documentation to indicate that PFC's other than those identified by the Navy and the Town, were likely to be in the hospital's water.

I attended the hospital's August 14, 2017 Board of Commissioners meeting to present additional documentation regarding the PFC contamination and to complain about the failure of WH's General Counsel to provide promised information about actions planned or taken to install a PFC filtration system. At that meeting, I was led to believe that such a system had been installed. In fact, the Board Chair, Ron Wallin, interrupted my comments about the need for a PFC treatment system to tell me that my concerns had been addressed. He then directed me to George Senerth, the Hospital's Ex. Dir. of Facilities and Engineering, for details.

I had a brief discussion with Mr. Senerth in the presence of a news reporter. I asked for more information about the system, making it clear that I was talking about filtration with activated carbon designed to remove PFCs. I was told that a filtration system had been installed and that a "pre-filter" and "post filter" analysis of hospital water indicated its effectiveness.

After WH's August meeting, I attempted to arrange a meeting between concerned citizens and the hospital staff to see the PFC removal system. Mr. Senerth never returned my subsequent phone calls and emails. I then received an email from WGH's General Counsel stating that the filtration system could not be seen for "security" reasons.

The truth of the matter was revealed when the hospital responded to my public records request of August 17 and stated, "We do not maintain a system-wide water filter that filters all water coming into the hospital. The only hospital-wide system that we have is a water softening system, but that is not designed to be, nor does it function as a filtration system."

At best, WH's August 14 misrepresentation about the existence of a PFC filtration system reflects an appalling lack of understanding and concern about a legitimate public health issue.

In response to my public Records Request, WH produced a June 27 "pre filter" and a July 11"post-filter' PFC analysis report. (see attached).

If there is no system-wide filtration system, then where were these samples taken?

Why were different laboratories using different detection limits used to analyze the pre and post filter samples?

Missing from WH's response to my public records requests, is the communication to the laboratory identifying the requirements for the pre and post filter testing the hospital requested. Provide the missing document and those questions might be answered.

Wherever the pre and post-filter samples were taken, the results of analysis do not show the "filtered" water to be free of PFCs. The PFHxS found at 27.8 parts per trillion (ppt) in the "pre-filter" sample would not have been detected in the "post-filter" sample because a 30 ppt method reporting limit was used for the post-filter analysis. (see attached)

On April 11, 2017, the day after I expressed my concerns to you and your board about the PFCs in the water, including PFHxS and PFHpA, you communicated with Coupeville Mayor Molly Hughes concerning an agreeable public position. It focused only on PFOA and PFOS for which EPA has "guidelines." No reference is made to other PFCs. Had you asked about other PFCs known to be in the Town's water, you might have learned that the Town had been finding them since November of 2016. Apparently, this is information you never asked for and the Town of Coupeville never volunteered.

The Mayor suggested wording which states, "Based on current state guidelines. We believe the water used by patients and staff at Whidbey Health is safe to drink." The absence of guidelines for PFCs other than PFOA and PFOS is not an indication that they are safe in drinking water. It only means that there is insufficient information to determine what if any health impacts could result from exposure.

Understand that levels of PFC's in the hospitals water that have yet to reach what you refer to as a "level of concern," could increase. An increase is possible because of the new and higher levels of PFC contamination found at the Navy's Outlying Field. Additionally, the Town's unprotected Fort Casey well, whose "clean" water is currently blended with contaminated water from the Keystone well, is at risk of contamination.

The Town's Testing for PFC's

A November 1, 2016 Coupeville News Release stated that the Town had tested its drinking water for three PFAS chemicals and found only one (PFOA). ¹ Shortly thereafter, the Town's Mayor gave inquiring citizens a copy of a laboratory report reflecting the Town's testing for the three PFAS chemicals. Town has since produced a more complete version of the November of 2016 laboratory report showing it had actually tested for the six PFCs identified in EPA's Unregulated Contaminate Monitoring Rule. Four were found (PFOA, PFHpA, PFBS, PFHxS).

The differing versions of laboratory reports were based on analysis of the same set of water samples, by the same laboratory on the same day. The report showing the results of the Town's testing of 6 PFCs was not made public until August of 2017 in response to a Public Records Act request. Also produced were results of testing for the six PFCs done in March and June of 2017. The reports of analysis for all six PFC's showed PFOA, PFHpA, PFBS, PFHxS to be in the Town's water. (see attached)

According to Coupeville's Mayor, the November 2016 results of the testing for all six chemicals had not been received when the town issued November 2016 news release was issued. Even so, the Town did not later reveal to the general public, or apparently to WGH, the true extent of the Navy's PFC contamination. As of August 22, 2017, the Island County Health Department representative with the responsibility of interfacing with the Navy and other regulatory officials on the PFC issues was unaware that the Town had tested for and found the additional PFCs in its drinking water.²

Citizen Testing Also Finds PFCs in Coupeville and WH Water

In May of 2017, a Coupeville family had their drinking water tested for six PFCs, including PFHxS and PFHpA. 3 The family's water was analyzed by a laboratory the Navy has used and performed in accordance with EPA's approved method for PFC analysis. PFOA was found at 30 ppt, PFHxS at 32.8, PFHpA at 4.58 ppt, and PFBS at 7.68 ppt. The analysis was done twice. The results were consistent with those found in samples taken at five other locations served by Coupeville's water system. PFOS was found at two of the five other locations.

According to Whidbey Water Keepers, a sample of the hospital's water was also tested. The results were said to be "consistent" with the finding of PFCs, including PFHxS and PFHpA, at the Coupeville residences. Despite repeated requests that it do so, WWK has yet to release the actual report of analysis of WGH's water.

In response to my public Records Request, WH produced "pre filter" and "post-filter' PFC analysis reports of its water. Different laboratories using different detection limits were used to analyze the pre and post filter samples. Contrary to WGH's representations to me, these reports do not show WGH's water to be free of PFCs. For instance, the PFHxS found at 27.8 ppt in the WH's June 27 "pre-filter"

sample would not have been found in the July 11 "post-filter" sample because a 30 ppt Method Reporting Limit was used for the post-filter analysis. (see attached)

Health Concerns

According to the Agency for Toxic Substances and Disease Registry (ATSDR) studies indicate PFCs can, "affect the developing fetus and child, including possible changes in growth, learning, and behavior. In addition, they may decrease fertility and interfere with the body's natural hormones, increase cholesterol, affect the immune system, and even increase cancer risk."

There are also concerns about the presence of PFCs in breast milk and umbilical cord blood, and the fact that levels found int the blood of infants and children are generally higher than in adults. Studies, related to child exposures, suggest they can:

- reduce immune response to certain vaccinations4
- increase the risk of infection (higher exposures to PFOA, PFOS and PFHxS tended to increase episodes with fever and coughing). 5
- Children with higher blood levels of PFHxS were found to have an increased chance of attention-deficit/hyperactivity disorder (ADHD), and preteens with higher levels of six PFASs tend to be more impulsive.6
- PFCs, including PFHxS, affect the function of sex hormone receptors.7

States are also concerned about PFHpA and PFHxS. Colorado included PFHpA along with PFOA and PFOS in its combined health advisory guidance level of 70 ppt. (EPA does not include PFHpA). Connecticut's "Action Level" above which the state can take action, is 70 ppt for the sum of PFOS, PFOA, PFNA, PFHxS, and PFHpA. (EPA only considers the sum of PFOA and PFOS)

Minnesota's Drinking Water "guidance value" is 35 ppt for PFOA and 27 for PFOS. Because PFHxS remains in the body longer than PFOS and "appears to be similar in toxicity as PFHxS", the same guidance value for PFOS is recommended for PFHxS.

It takes, 2 to 4 years to get rid of half the PFOA in your body, and 5 to 6 years for PFOS. 8 to 9 years for PHFxS. Given how long the Navy's PFCs have been in the aquifer, it is possible, even likely, that a significant number of people have elevated levels of PFCs in their blood.

After PFCs were discovered in water leaking from a former Air Force Base in New Hampshire, almost 1600 potentially exposed people had their blood tested

(366 children, 31 adolescents, 1181 adults). Elevated levels of PFOA, PFOS and PFHxS were found compared to national averages, with "significantly" higher concentrations found in children aged 11 years and younger. PFHxS is highest PFAS found in the blood.8

It is no surprise that PFHxS was found at higher levels than PFOA in the citizen sampling of Coupeville's water because it was found at higher levels than PFOA at the OLF.

Newfound Pollution at OLF Increases Risks

On March 4, 2017 the Navy tested 27 monitoring wells it had installed at the OLF. More sites and higher levels of contamination in the aquifer were discovered. PFCs were found in 8 of the monitoring wells. PFOA was found up to 1,190 ppt, PFOS up to 54.7, and PFBS up to 473 ppt.9 The wells were not monitored for PFHxS or PFHpA.

It is now clear that these chemicals are in the Coupeville's water – and that concentrations may increase. If so, they are likely to increase in the hospital's unprotected water.

People come to this hospital, with its new \$50 million dollar wing, to get well and have children, not to drink water contaminated with chemicals that accumulate in the body and are linked to a host of health affects.

The fact that a PFC filtration system has not been installed means that unknowing patients, employees and visitors have been drinking water supplied by the Town of Coupeville containing PFCs that they have not been told about. Keeping them in the dark does not protect them.

Sincerely,

Rick Abraham

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9248 • email moscow@anateklabs.com 504 E Sprague Ste D+ Spokane WA 99202 + (509) 838-3909 + Fax (509) 838-4433 + email spokane@anateklabs.com

Client: Address: TOWN OF COUPEVILLE

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

161114025-006

Batch #:

161114025

Percent Recovery

84 4

82 1

Project Name: DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID Matrix Comments	161114025-005 COCPFC05 Drinking Water		Sampling D Sampling T Sample Loc	ime	11/10/2016 11.50 AM		e/Time Receiv raction Date	red 11/11/201 11/18/201	6 11.08 AM 6
Parameter		Result	Units	PQL	Analysis	Date	Analyst	Method	Qualifie
Perfluorobutar	nesulfonic acid - PFBS	ND	ug/L	0 09	11/28/2	2016	TGT	EPA 537	
Perfluorooctan	esulfonic acid - PFOS	ND	ug/L	0.01	11/28/2	2016	TGT	EPA 537	
Perfluorooctan	oic acid - PFOA	ND	ug/L	0 02	11/28/2	2016	TGT	EPA 537	
			Surrog	ate Da	ta				
ample Number	161114025-005					***************************************			
Surrogate S	tandard		Method	1		Percer	nt Recovery	Control	l imits
13C-PFDA			EPA 53	7			83.9	70-1	
13C-PFHxA			EPA 53	7			88.6	70-1	30
Sample Number	161114025-006		Sampling D		11/10/2016	Date	Time Receive	ed 11/11/201	3 11 08 AM
Client Sample ID Matrix Comments	COCPFC06/07 Drinking Water		Sampling Ti		12:15 PM	Extra	action Date	11/18/2010	
Parameter		Result	Units	PQL	Analysis	Date	Analyst	Method	Qualifier
Perfluorobutan	esulfonic acid - PFBS	ND	ug/L	0.09	11/28/20	016	TGT	EPA 537	
Perfluorooctane	esulfonic acid - PFOS	ND	ug/L	0.01	11/28/20	016	TGT	EPA 537	
	pic acid - PFOA	0 0270	ug/L	0.02	11/28/20	016	TGT	EPA 537	

Method

EPA 537

EPA 537

Sample Number

Surrogate Standard

13C-PFDA

13C-PFHxA

Control Limits

70-130

70-130

Town of Coupeville's Nov 2016 Testing Treatment Plant Distribution Point Response to Public Records Request in August 2017

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Client: Address: TOWN OF COUPEVILLE

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name: DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID Matrix	161114025-006 COCPFC06/07 Drinking Water		Sampling D Sampling To Sample Loc	ime	11/10/2016 12:15 PM		Time Received ction Date	11/11/2016 11/18/2016	11:08 AM
Comments									
Parameter		Result	Units	PQL	Analysis D	Date	Analyst	Method	Qualifier
Perfluorobutan	esulfonic acid - PFBS	ND	ug/L	0 09	11/28/20	16	TGT	EPA 537	
Perfluorohepta	noic acid - PFHpA	ND	ug/L	0.01	11/28/20	16	TGT	EPA 537	
Perfluorohexan	esulfonic acid - PFHxS	0.0184	ug/L	0.03	11/28/20	16	TGT	EPA 537	J
Perfluorononan	ioic aid - PFNA	ND	ug/L	0 02	11/28/20	16	TGT	EPA 537	
Perfluorooctane	esulfonic acid - PFOS	ND	ug/L	0.01	11/28/20	16	TGT	EPA 537	
Perfluorooctane	oic acid - PFOA	0.0270	ug/L	0.02	11/28/20	16	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-006								
Surrogate S	tandard		Method	ı		Perce	nt Recovery	Control L	imits
13C-PFDA		EPA 537					84.4	70-13	0
13C-PFHxA			EPA 537				82.1	70-13	0
Sample Number	161114025-007		Sampling D	ate	11/10/2016	Date	/Time Receive	d 11/11/2016	11 08 AM
Client Sample ID	COCPFC08		Sampling Ti	me	12 16 PM	Extr	action Date	11/18/2016	
Matrix	Drinking Water		Sample Loc	ation					
Comments									
Parameter		Result	Units	PQL	Analysis	Date	Analyst	Method	Qualifie
Perfluorobutar	nesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2	016	TGT	EPA 537	
Perfluorohepta	noic aod - PFHpA	ND	ug/L	0.01	11/28/2	016	TGT	EPA 537	
Perfluorohexar	nesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2	016	TGT	EPA 537	
Perfluorononai	noic aid - PFNA	ND	ug/L	0.02	11/28/2	016	TGT	EPA 537	
Perfluorooctan	esulfonic acid - PFOS	ND	ug/L	0.01	11/28/2	016	TGT	EPA 537	
Perfluorooctan	ioic acid - PFOA	ND	ug/L	0.02	11/28/2	016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-007			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	938	70-130
13C-PFHxA	\	EPA 537	89 4	70-130

Certifications neld by Anatek Labs ID. EPA (200013 AZ 0701. FL(NELAP) F87893. ID (200013, MT CERTI028, NM. (200013, NV. (200013, OR (2000010, OZ. WA C556. Certifications held by Anatek Labs WA. EPA WA00169. ID WA00169. WA C566, MT Certifications FLINELAP). 6871099.

Town of Coupeville's March 28, 2017 Testing Well 108 next to the OLF and water at Treatment Plant Distribution Point Response to Public Records Request in August 2017

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Client:

TOWN OF COUPEVILLE

Batch #:

170329059

Address:

PO BOX 725

Project Name: 537

155509

COUPEVILLE, WA 98239 JOSEPH GROGAN Attn:

PWS #:

Analytical Results Report

Sample Number	170329059-001	S	Sampling Date	3/	/28/2017 D	ate/Time Rece	ived	3/29/2017	1.55 PM
Client Sample ID	DIST	S	ampling Time	2	00 PM E	xtraction Date		4/3/2017	
Matrix	Drinking Water	F	acility ID		s	ample Point It)	1	
Sample Location		c	Comments						
Parameter		Result	Units	PQL	Analysis Date	Analyst	Met	thod	Qualifie
Perfluorobutan	esulfonic acid - PFBS	ND	ug/L	0.09	4/4/2017	161	EPA	3 537	
Perfluorohepta	noic acid - PFHpA	< 0.005	ugil	0.01	4/4/2017	TGT	EPA	A 537	
Perfluorehexar	nesulfonic acid - PFHxS	0.0292	ug/L	0 03	4/4/2017	TGT	EPA	4 537	J
Perfluorononas	noic aid - PFNA	ND	ug/L	0 02	4/4/2017	TGT	EPA	4 537	
Perfluorooctan	esulfonic acid - PFOS	ND	ug/L	0 04	4/4/2017	TGT	EPA	537	
Perfluorooctan	oic acid - PFOA	0.0362	ug/L	0 02	4/4/2017	TGT	EPA	537	

Surrogate Data

Sample Number	170329059-001			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	86.0	70-130
13C-PFHA	4	EPA 537	83.5	70-130

Town of Coupeville's June 27, 2017 Testing - Well 108 Next to the OLF and Treatment Plant Distribution Point.

Response to Public Records Request in August 2017

Anatek Labs, Inc.

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Client:

TOWN OF COUPEVILLE

170628047

Address:

P.O. BOX 725

Project Name: EPA 537

Attn:

COUPEVILLE, WA 98239 JOSEPH GROGAN

Analytical Results Report

Sample Number Client Sample ID Matrix	170628047-001 1-08 Orinking Water		Sampl	ing Date ing Time e Location	7 30 AM		ime Received tion Date	6/28/2017 6/29/2017	1 00 PM
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutan	esulfonic acid - PF	ND	ug/L	0 025	0.09	6/30/2017	TGT	EPA 537	doanner
Perfluorohepta	noic acid - PFHpA	0.00919	ug/L	0.005	0.01	6/30/2017	TGT	EPA 537	
	nesulfonic acid • P	0.0528	ug/L	0.005	0.03	6/30/2017	TGT	EPA 537	J
	noic aid - PFNA	ND	ug/L	0.005	0.02	6/30/2017	TGT	EPA 537	
	esulfonic acid - PFUS	ND	ug/L	0.01	0.04	6/30/2017	TGT	EPA 537	
Perfluorooctan	oic acid - PFOA	0.0543	ug/L	0 005	0 02	6/30/2017	TGT	EPA 537	
Sample Number Client Sample ID Matrix	170628047-002 DIST Drinking Water		Sampli	ng Date ng Time	6/27/201 7:30 AM		me Received ion Date	6/28/2017 6/29/2017	1:00 PM
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutane	esulfonic acid - PF	ND	ug/L	0.025	0.09	6/30/2017	TGT	EPA 537	Quantito
Perfluoroheptar	noic acid - PFHpA	ND	ug/L	0.005	0.01	6/30/2017	TGT	EPA 537	
Perfluorohexan	esulfonic acid - P	0.0295	ug/L	0.005	0.03	6/30/2017	TGT	EPA 537	
Perfluorononan	oic aid - PFNA	ND	ug/L	0.005	0.02	6/30/2017	TGT		J
Perfluorooctane	sulfonic acid - PFOS	ND	ug/L	0.01	0.04	6/30/2017	TGT	EPA 537	
	ic acid - PFOA			- 10 1	~ 0~	0.30.2017	101	EPA 537	

Authorized Signature

Kathleen a. Sattle Kathleen A Sattler, Lab Manager

The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

MCL EPA's Maximum Contaminant Level

Not Detected

POL Practical Quantitation Limit

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Certifications held by Anates Labs ID: EPA ID00013, AZ 0701; FLINELAPI ER7893. ID (P00013, MT CERTICOS) NM: (P00013 NV ID00013 NV ID000013 NV ID000013 NV ID000013 NV ID000013 NV ID000013 NV ID0000013 NV ID0000013 NV ID000000013 NV ID00000000000000000000

Results of Coupeville Resident's May 2, 2017 Testing Coupeville Drinking Water.

Sample ID:	36							Modifie	d EPA M	ethod 53
Client Data Name: Project:	Whidbey Water Keepers		Sample Data Matrix: Drink Sample Size: 0.263	ing Water L	L Q	borator ab Samp C Batch	ble: 1700549-15 B7E0020	Date Received Date Extracted		
Date Collected:	30-Apr-2017 15:15				D	ate Anal	lyzed: 09-May-1721.44 Co	TURNE BEH (18		
Analyte	Conc. (ng/L)	RL		MDL	Qualifiers	1	Labeled Standard	40R	LCL-UCL	Qualifiers
PFBS	8.44	1.90		0.850		IS	13C3-PFBS	48.7	60 - 150	Н
PFHpA	5.35	1.90		0.280		IS	13C4-PFHpA	47.0	60 - 150	H
PFHxS	36.4	1.90		0.449		IS	1802-PFHxS	48.5	60 - 150	H
PFOA	30.6	1.90		0.309		IS	13C2-PFOA	40 0	60 - 150	H
PFOS	ND	1.90		0.383		IS	13C8-PFOS	39.9	60 - 150	H
PFNA	ND	1 90		0.384		IS	13C5-PFNA	41 9	50 - 150	H
			MDL - Method detection limit			LCL-UC	L - Lower control losss - upper control	besit		
			RI Reporting limit			When rep	eported to MDL. ported, PFBS, PFHsS, PFOA and PFO! listoir numer is reported for all other a		ranched momers.	

Analysis Data from Whidbey Water Keepers. Testing results of six of residential sites on Coupeville's water system. Concentrations are in parts per trillion (ppt)

Chemical	Site 1	Site 2	Site 3	Site 4 analyzed twice	Site 5	Site 6
PFBS	8.38	1.75	7.98	7.68/8.44	8.84	8.19
PFHpA	5.49	0.858	5.5	4.58/5.35	5.85	5.98
PFHxS	38	3.05	40.3	32.8/36.4	37	39.2
PFOA	26.6	10	25	29.4/30.6	27.1	28.6
PFOS	0.484	1.15	ND	ND/ND	ND	ND
PFNA	ND	ND	ND	ND/ND	ND	ND

Whidbey General Hospital Water Received from Coupeville BEFORE FILTRATION June 27, 2017

Anatek Labs, Inc.

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Client: Address: AVOCET ENVIRONMENTAL TESTING

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

170629026

Project Name: WHIDBEY GENERAL

HOSPITAL

Attn:

Analytical Results Report

Sample Number	170629026-001		Sampling (Dete	6/27/20	17 Date/Ti	me Received	6/29/2017	10:11 AM
Client Sample ID	74687		Sampling 1	ime	1.00 Pf	M Extract	ion Date	6/29/2017	10.1174
Matrix	Drinking Water								
Comments									
Parameter		Result	Units	MOL	PQL	Analysis Dato	Analyst	Method	Qualifie
Perfluorobutan	esulfonic acid - PFBS	ND	ug/L	0 025	0.09	6/30/2017	TGT	EPA 537	
Perfluorohepta	noic acid - PFHpA	ND	ug/L	0.005	0.01	6/30/2017	TGT	EPA 537	
Perfluoronexar	esuffonic acid - PFHxS	0.0278	USIL	0.005	0.03	8/30/2017	TOT	EPA 537	J
Perfluorononar	iolc aid - PFNA	ND	ug/L	0.005	0.02	6/30/2017	TGT	EPA 537	
Perfluorcoctan	esulfonic add - PFOS	CN	ug/L	0.01	0.04	8/30/2017	TGT	EPA 537	
Perfluoreoctan	olc acid - PFQA	0.0323	L'qu	0.005	0.02	6/30/2017	TGT	EPA 537	

Surrogate Data

Sample Number	170328026-001			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	93.3	70-130
13C-PFHx		EPA 537	84.8	70-130

Authorized Signature

Todd Taruscio, Lab Manager

The reported value is between the liaboratory method detection limit and the liaboratory priecocal quantitation limit MCL

EPA's Maximum Contaminant Level

NO Not Detected

Practical Quantitation Limit

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Whidbey General Hospital Water Received from Coupeville AFTER HOSPITAL FILTRATION July 11, 2017



Burlington, WA	Copores Laboratory (w)	ISS SWest N	Suringen, WA 95255	806 755 \$205 (NO. 757 1400
Bellingham, WA	Microbiology (b)	805 Croners Chillian	Seingrein A4 4005	9675 (2)
Portland, OR	Monatching Chemistry (d	975 SW Pones O Sw W	Witchelle Off \$7070	NO 862 TES
Corvallis, OR	Microbiology (s)	5400W Translated	Consist Of \$100	541.753 6445

Page 1 of 1

UNREGULATED CONTAMINANT MONITORING REGULATION REPORT

Client Name: Diamond B-WGH 3436 Airport Dr Bellingham, WA 98225

> System Name: System ID Number: Facility ID: Facility Name Sample Type

Sample Purpose: Investigative or Other

Sample Point ID:

County:

Reference Number: 17-16834 Project: PFAs

> Field ID: WGH-Post Filter Lab Number: 38170 Collect Date: 7/11/17 14:00 Date Received: 7/12/17 Report Date: 8/14/17 Sampled By: Craig Cheadle

Sampler Phone: Approved By: fm Authorized By:

> Lawrence J Henderson, PhD Director of Laboratones, Vice President

PA#	COMPOUND	VALUE	UNITS	METHOD	MRL	ВАТСН	DATE ANALYZED	CODE	ANALYS
	Perfluorinated Compounds								
	PERFLUOROOCTANESULFONIC ACID (PFOS)	ND	ugt	537	0.04	ANATEK, 170731	07/31/17	WA00097	tat
	PERFLUOROOCTANOIC ACID (PFOA)	ND	ugt	537	0.02	ANATEK, 170731	07/31/17	WA00097	tat
	PERFLUORONONANOIC ACID (PFNA)	ND	ugl	537	0.02	ANATEK_170731	07/31/17	WA00097	tat
	PERFLUOROHEXANESULFONIC ACID (PFHXS)	ND	ug1L	537	0.03	ANATEK_170731	07/31/17	WA00097	tat
	PERFLUOROHEPTANOIC ACID (PFHPA)	ND	ugt	537	0.01	ANATEK_1/0/31	07/31/17	WA00097	tat
	PERFLUOROBUTANESULFONIC ACID (PFBS)	ND	ugl	537	0.09	ANA TEK_170731	07/31/17	WA00097	tgt

NOTES:

pound was not detected above the Lab's Method Reporting Limit - MRI.

A Result of "ND" indicates that the compound v MRs, is the method reporting Arms, EPTDS is entry point to the distribution system.

If you have any questions concerning this report contact Lawrence J Henderson at the above phone number. FORM CUCMR IN

³ The independent sampling of drinking water was facilitated by Whidbey Water Keepers.

Scholarly articles for • PFAS exposure and increase risk of infection. (higher exposures to PFOA, PFOS and PFHxS

⁶ Exposure to Polyfluoroalkyl Chemicals and Attention Deficit ...

https://www.ncbi.nlm.nih.gov >; Stein, CR, and DA Savits. 2011. Serum perfluorinated compound concentration and attention deficit/hyperactivity disorder in children aged 5 to 18 years. Environmental Health Perspectives http://dx.doi.org/10.1289/ehp.1003538.

⁷ Perfluorinated compounds affect the function of sex hormone receptors.

https://www.ncbi.nlm.nih.gov/pubmed/23764977

² Rick Abraham, Maryon Atwood, and Cate Andrews meeting with Doug Kelly, Hydrologist, Island County Health.

⁴ <u>Journal of Immunotoxicology</u> Volume 10, 2013 - <u>Issue 4</u>, Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood <u>Berit Granum</u>, <u>Line S. Haug</u>, <u>Ellen Namork</u>, <u>Solvor B. Stølevik</u>, <u>Cathrine Thomsen</u>, <u>Ingeborg S. Aaberge</u>, <u>http://dx.doi.org/10.3109/1547691X.2012.755580</u>

Presentation, PFAS Testing at Pease, Highly Fluorinated Compounds – Social and Scientific Discovery Northeastern University, June 14, 2017, Andrea Amico, AlaynaDavis, Michelle Dalton; State of New Hampshire Department of Health and Human Services Division of Public Health Services, Pease PFC Blood Testing Program: April 2015 – October 2015

⁹ OLF Coupeville Site Inspection Fact Sheet and Poster, Navy Open House May 2017



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5090 Ser N00/3215 September 19, 2017

The Honorable Molly Hughes Mayor of Coupeville PO Box 725 Coupeville, WA 98239

Dear Restoration Advisory Board Participants and Members:

SUBJECT: RESTORATION ADVISORY BOARD MEETING FOR NAVAL AIR STATION WHIDBEY ISLAND SCHEDULED FOR OCTOBER 19, 2017

The next Environmental Restoration Advisory Board (RAB) meeting is scheduled for Thursday, October 19, 2017, from 5 to 7 p.m. at the NAS Whidbey Island Chief Petty Officers' Club, 1080 W Ault Field Road, Oak Harbor, WA 98278.

Several topics will be discussed; including, the State Petroleum Cleanup Program, Military Munitions Response Program, and the CERCLA Program (including work at the Area 6 landfill and drinking water PFAS investigation).

Please direct any RAB-related inquiries to Mr. Mike Welding, NAS Whidbey Island Public Affairs Officer, at (360) 257-2286 or michael.welding@navy.mil.

Sincerely,

Captain, U.S. Navy Commanding Officer

Enclosure: 1. Draft Minutes of the May 15, 2017, RAB Meeting

NAVAL AIR STATION WHIDBEY ISLAND

RESTORATION ADVISORY BOARD

DRAFT MEETING MINUTES

May 15, 2017

Oak Harbor, Washington

Attendees:

Captain Geoffrey Moore

Naval Air Station Whidbey Island (NASWI) Commanding Officer

Commander Allen Willey

NASWI Public Works Officer

Melanie Bengtson

NASWI Environmental Program Director

Mike Welding

NASWI Public Affairs Officer

Kendra Leibman Kristeen Bennett Mark Wicklein NAVFAC Northwest NAVFAC Northwest NAVFAC Northwest

Tom Decosta

Navy

Doug Kelly

Island County Public Health

Maddie Rose Pat and Tom Martinez Citizen

George Peterson Mary Ellen Mozes Citizen WASTEWISE Citizen

Sandra Caldwell Ron Johnson WA Dept of Ecology WA Dept of Ecology

Steve Erickson

Whidbey Environmental Action Network

Jill Wood Celine Servatius

Island County Public Health Naval Hospital Oak Harbor

David A. Macys

Island County Community Health Advisory Board

Marianne Edain

Whidbey Environmental Action Network

Dave Jasman

Citizen

Citizen

Arnie Peterschmidt

City Of Oak Harbor Public Works

Kathy Lester
Ann Brett
Martha Yount
Donald Rockwood

Citizen Citizen Citizen

Joel Servatius

City of Oak Harbor

The meeting opened at 5:04 p.m. by Ms. Melanie Bengtson welcoming everyone.

Captain Geoffrey Moore delivered opening remarks regarding the purpose of the Restoration Advisory Board and the future of the RAB as Mr. Ed Oetken, community co-chair for about 23 years, is retiring and the recent finding of environmental impacts from use of firefighting foams.

Introductions were delivered by going around the table and room. Ms. Bengtson briefly reviewed the proposed agenda for the meeting and the RAB process and purpose.

The minutes of the last RAB meeting (August 18, 2016) were voted on and approved.

The RAB charter is currently in the process of being updated. The drafted version will need to be reviewed and approved by the co-chairs and the RAB members. The final version will be approved by Captain Moore.

Ms. Bennett presented an update on the following petroleum sites at NASWI: Fuel Farms 1, 2, 3, and 4.

- While installing the A-3 monument at the northwest corner of Ault Field Road and Langley Boulevard, an unknown underground storage tank (UST) was encountered. A preliminary investigation was conducted and primarily diesel with a little bit of gasoline was identified. Work is still being performed and a limited source removal action will probably be conducted in the next fiscal year.
- Remedial actions have been completed for the fuel farms and they are in long-term monitoring (LTM).
- A five-year review is being conducted on all of our petroleum sites including Fuel Farms 1 through 4 and an old site on the seaplane base. Public comment is being taken during this process.
- The overall cleanup goal of the State Petroleum Program is to achieve unlimited use and unrestricted exposure (UUUE). As part of the LTM, once we have four consecutive quarters of no detections above the cleanup level, the individual monitoring wells can be decommissioned. Based on current data, it is anticipated another three wells will be eligible for decommissioning at the end of this fiscal year.

Ms. Bennett presented an update on the NASWI Munitions Response Program:

- During the August 2016 RAB Meeting, closure of a couple of sites was discussed.
- An overview of four sites using a map was provided:
 - o former Lake Hancock Target Range (LHTR)
 - Aviation Fleet Gunnery School including Mobile Tower Turret Range and Machine Gun Ranges B and C. (Machine Gun Range A is still used)
 - Polnell Point was used as an ordnance disposal area.
 - Crest Harbor Practice Range was used primarily is WWII and 1950s for underwater demolition of munitions. It is still currently used as a training area for Explosive Ordnance Disposal (EOD) so we will likely remove from program.
- The Record of Decision (ROD) has been signed for LHTR and the remedial action will be implemented including limited surface removal and land use controls (LUCs), including periodic inspections, fencing, and signage. Limited surface removal will be conducted around the target area and along the beach because of pristine wetlands and historical natural landmark designation. The Navy previously conducted cleanups in early to mid-1970s and up to 14 tons of munitions debris was removed.
- There are no current plans for additional work at the Aviation Fleet Gunnery School including Mobile Tower Turret Range and Machine Gun Ranges B and C. (Machine Gun Range A is still used) The current remedy is LUCs because the property is still Navy owned.

Ms. Bennett introduced CERCLA Site Area 6 and mentioned her and Ms. Kendra Leibman both work on different issues for Area 6.

- Area 6 is the former current landfill that is southeast of Ault Field.
- Ms. Bennett manages the long-term management and part of the remedial action objective groundwater monitoring for Area 6, and also for Area 31, which is the former runway fire school. Area 31 is no longer under active remedy.
- Solvents were historically disposed of in Area 6 landfill.
- The ROD was established in 1993 including installing an engineered cap (completed 1995-1996) and installing and operating a pump and treat (P&T) system with air stripping (operating since 1996).
- In 2003, 1,4-dioxane was discovered at Area 6. The current treatment system only treats volatile organic compounds (VOCs). During the last five years, several technologies have been evaluated to optimize the existing treatment system. Advanced oxidation has looked the most promising to treat both VOCs and 1,4-dioxane. A Focused Feasibility Study (FFS) was prepared to document all the different remedial alternatives and select the preferred alternative (advanced oxidation) for 1,4-dioxane. The proposed remedy is to refurbish the existing western plant and change the treatment technology from air stripping to advanced oxidation. A new plant to treat the south plume is also being evaluated. The FFS is in draft and aiming to finalize this summer. Once the FFS is finalized, a Proposed Plan will be prepared and it will be available for public comment. Additionally, a ROD Amendment will be prepared to address 1,4-dioxane and aiming to finalize in the winter.
- On-site sampling for per- and polyfluoroalkyl substances (PFAS) in Area 6 will be conducted this summer.
- Off-site sampling (downgradient of Area 6) for 1,4-dioxane and vinyl chloride (VC) will be conducted this summer. PFAS will be sampled as well if they are detected in on-site samples. This data will be used to aid in the remedial design for the new south oxidation plant.

Ms. Bennett presented an update on CERCLA Sites Area 1 (former Beach Landfill) and Area 52 (former Jet Engine Test Cell).

- Area 52 was petroleum site and monitoring has been completed.
- The Navy repaired most of the sea wall fronting Area 1 in 2016 and completed it in March 2017. The purpose of the repair was to keep the landfill contained as it encounters significant erosion. Based on the setting, seawall repair will likely be conducted every three to five years.

Ms. Bennett discussed the CERCLA Implementation Process which includes investigation, cleanup, and long-term management (LTMgt). LTMgt is instituted when contaminants are left in place above UUUE criteria. Part of the five-year review process is using the LTM data to evaluate the effectiveness of the remedy. The effectiveness of the remedy is also evaluated on a yearly basis.

A citizen asked Ms. Bennett about the remedy for the fuel farms. The remedy depends on where you are (setting) and what fuel farm. Free product removal is still being conducted in a few wells. The primary remedy is monitored natural attenuation (MNA) and it is a long process. Free product removal has historically been conducted once a year although we are planning on adding monthly removal events during the winter to hopefully increase product removal.

A citizen asked Ms. Bennett how sea level rise and managed retreat have been factored into the landfill seawall (Area 1). Ms. Bennett stated she believes it will be addressed in next five-year review for the CERCLA sites (FY19). Mr. Mark Wicklein added the engineering design of the erosion control system may need to be more robust in the future to account for the rise in seawater.

A citizen asked how the contaminants at Camp Mugu in California compare to the contaminants found here. Ms. Leibman stated as we become aware of chemicals we are addressing them as the science improves and mentioned the new group of chemicals called PFAS. Ms. Leibman asked to table the question until after the PFAS discussion.

Ms. Leibman discussed PFAS investigation.

- PFAS, also known as PFCs (perfluorinated chemicals) are in AFFF (aqueous film-forming foam). Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), which are two of the PFAS compounds, have been the most extensively produced and studied. In 2009, EPA established Provisional Health Advisory (PHA) for PFOS and PFOA. Historically, PFASs in AFFF have been used by the Navy to help fight fires at airfields, ships and other places where petroleum-product based fires are a risk. In May 2016, the EPA set a lifetime health advisory (LHA) for PFOA and PFOS, which are two of the PFAS compounds.
- In June 2016, the Navy started to evaluate what sites could be impacted by Navy's use of AFFF. The Navy identified sites at Ault Field and the Outlying Landing Field (OLF) Coupeville that may have known and suspected releases of AFFF. In November 2016, the Navy started sampling offsite private drinking water wells and two phases of sampling have been conducted near Ault Field and OLF Coupeville.
- Two rounds of public meetings have been conducted.
- A citizen asked about the Navy providing the sampling results to the public. Ms. Leibman stated
 the Navy has posted final sampling analysis plans on our website and additionally there is a
 regular weekly e-mail distribution list available. The Navy is notifying everyone of exceedances
 and detections above and below the lifetime health advisory, and non-detections as well. The
 Navy is not publicly providing maps with specific concentrations and locations because that is
 private information for the individual well owners.
- At OLF Coupeville, seven wells have exceedances of the lifetime health advisory, and two detections were below the lifetime health advisory, and all the rest were non-detects.
- In regards to the CERCLA process with PFAS compounds, the preliminary assessment and site
 inspection (PA/SI) step will also be conducted, which is part of the investigation phase. The
 Navy is providing bottled water to well users with concentrations above the LHA and that is
 considered an emergency removal action and is our first priority. The next steps are
 determining the extent and conducting periodic monitoring.
- A citizen asked how many dump sites have been identified off Ault Field. Ms. Bennett stated Sites 1, 2, 3, and 6 are currently active in the program.
- Groundwater results from Phase 2 sampling will be discussed at public meetings on May 31st and June 1st. Information about the current status of evaluating long-term solutions for people that are currently on bottled water will be presented. The next steps of investigation at Ault Field and OLF to delineate these compounds will be discussed.
- A citizen asked if the definition of on-site wells meant they are on military property. Ms.
 Leibman stated that the 27 wells have been installed at OLF Coupeville, which is military property. Off-site wells may become necessary to delineate the extent of contaminants.

- A citizen asked where the 1,4-dioxane plant would be placed. Ms. Leibman stated the exact
 location is being evaluated. It will be on Navy property on the south end. A citizen mentioned a
 map in the newspaper indicated that the plume is on to private property. Ms. Leibman stated
 the Navy is planning on conducting additional off-site delineation sampling summer 2017.
- A citizen asked what the contaminant plume depths are for PFAS at OLF Coupeville. Ms.
 Leibman stated PFAS compounds have been identified at depths between 90 to 220 feet below
 ground surface (bgs). The shallow groundwater unit is present at 90 feet bgs. A citizen stated
 there are some very shallow aquifers and asked if the 'much more shallow aquifers' were
 tested. Ms. Leibman stated some wells installed in the shallow aquifer did not have enough
 water to sample.
- A citizen asked to what extent PFAS material absorbs to soils. The different PFAS compounds behave somewhat differently but they tend to move very quickly in groundwater and transfer back and forth in soil and groundwater.
- A citizen asked where documents would be available as they will not be retained by the library.
 Ms. Leibman stated Ms. Leslie Yuenger is the contact person for access to the Administrative Record.

Ms. Bengtson discussed the RAB and membership.

- The RAB member is a voluntary position that would include regularly scheduled RAB meeting attendance, participation in a constructive and respectful manner, and providing appropriate advice and comments on restoration issues to help guide decision-makers. The RAB member purpose is to represent and communicate the community's interest in this program.
- Whidbey formed the first RAB in the Navy.
- The Navy is looking for new RAB members.
- Some of our local and state agencies like Island County Health Department (ICHD) have attended the RAB meetings and have provided good information. Our regulatory partners are not really members of the RAB meetings because they are the decision-makers ultimately.
- RAB applications will be reviewed and recommended to Captain Moore for final decision approval.
- A citizen asked how many RAB members there are and how many of those are community representatives. Currently Mr. Doug Kelly and Mr. Ed Oetken (community member) are the main RAB members. Captain Moore stated we want to revitalize the program as Mr. Ed Oetken is retiring after more than 22 years as co-chair. The Navy would like to get a larger and more active and representative RAB.

Ms. Bengtson opened the floor to community comments and questions.

A citizen commented that they appreciate the Navy's public outreach effort. It was suggested
that besides the local newspapers and the Whidbey Island Facebook page that notices are
placed on the webpages for the Oak Harbor Chamber of Commerce and the Coupeville Chamber
of Commerce.

Ms. Bennett stated hope to finalize the RAB membership and bring a draft of the new charter by the next RAB meeting. A RAB webpage is in the process of being set-up. Mr. Wicklein stated the Navy's desire for RAB members to be involved in finishing the charter. Ms. Bennett discussed increasing the frequency of RAB meetings – potentially quarterly. Ms. Bennett asked for feedback regarding the new venue and new evening time.

Mr. Wicklein reviewed action items for the next meeting including:

- more discussion at the RAB on history and what we've done in the past for cleanup
- Better mic system/layout
- Better room layout/venue
- RAB Members working group meeting prior to next RAB meeting
- Laser pointer
- Name tags
- Acronym cheat sheet

Captain Moore asked if the regulators had any comments. Ms. Sandra Caldwell commented she was pleased with the presentation and the Navy addressing PFAS. Ecology provides regulatory support for non-CERCLA or the non-EPA-related cleanup compounds like petroleum and munitions. Ecology can help answer questions regarding non-CERCLA related compounds.

Captain Moore closed meeting by thanking everyone for their engagement.

Meeting adjourned at 6:50 p.m.

Acronym List:

. . . .

NASWI - Naval Air Station Whidbey Island

ICPH - Island County Public Health

WEAN - Whidbey Environmental Action Network

RAB - Restoration Advisory Board

NAVFAC - Naval Facilities Engineering Command

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as "Superfund"

RPM - Remedial Project Manager

UST - Underground Storage Tank

AST - Aboveground Storage Tank

LTM - Long Term Monitoring

UUUE - Unlimited use and unrestricted exposure

LHTR - Lake Hancock Target Range

EOD - Explosive Ordnance Disposal

LUCs - Land use controls

ROD - Record of Decision

VOCs - Volatile Organic Compounds

P&T system - pump and treat system

FFS - Focused Feasibility Study

LTMtg - Long Term Management

MNA - Monitored Natural Attenuation

FY - Fiscal Year

OLF - Outlying Landing Field

AFFF - Aqueous film-forming foam

PHA - Provisional Health Advisory

LHA - Lifetime Health Advisory

PFOA - Perfluorooctanoic Acid

PFOS - Perfluorooctyl Sulfonate

PFCs - perfluorinated chemicals

PFAS – Per- and polyfluoroalkyl substances

VC - vinyl chloride

PA - Preliminary Assessment

SI - Site Inspection

PA/SI - preliminary assessment and site inspection

bgs - below ground surface

Areas:

- · Area 6 is the former current landfill that is southeast of Ault Field
- Area 31 is the former runway fire school
- Area 1 is the former Beach Landfill
- Area 52 is the former Jet Engine Test Cell

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT POST TREATMENT DISTRIBUTION POINT 434 WANAMAKER ROAD COUPEVILLE, WA 98239 WI-CV-1RW27-0318

RECEIVED
MAY 3 1 2018

TOWN OF COUPEVILLE

Date Collected: 3/23/2018 Time Collected: 09:05

Preliminary Results Provided: May 23, 2018

Below are the <u>preliminary</u> test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2018		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorooctane Sulfonate (PFOS)	ND	70	
Perfluorooctanoic acid (PFOA)	37.8	70	
PFOS and PFOA (cumulative) ¹	37.8	70	

¹Only detected values of PFOS and PFOA are summed.

Results for other PFAS where no EPA Health Advisory Levels have been established

	March 2018	Hanlah Advisans (must)
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	8.95 J	Not applicable
Perfluorohexanoic acid (PFHxA)	20.9	Not applicable
Perfluoroheptanoic acid (PFHpA)	5.82 J	Not applicable
Perfluorohexane sulfonate (PFHxS)	33.1	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion



Sample ID: WI-CV-1RW27-0318	I-CV-1RW2	7-0318									EPA Method 537	hod 537
Client Data						Ioh	Toborotom Doto					
Name: Project: Location:	CH2M Hill CTO-4041 Na DW	CH2M Hill CTO-4041 Navy Clean NASWI DW	Matrix: Date Collected:		Drinking Water 23-Mar-18 09:05	Lab S Date	Laboratory Data Lab Sample: Date Received:	1800572-03 27-Mar-18 09:39)3 8 09:39	Column:	BEH C18	
Analyte			Conc. (ng/L)	DF	TOD	F00	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS			8.95	0.436	4.92	9.84	-	B8C0184	29-Mar-18	0.2541	03-Apr-18 11:73	-
PFHxA			20.9	0.857	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	
PFHpA			5.82	0.524	4.92	9.84	ſ	B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
PFHXS			33.1	0.408	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
PFUA			37.8	1.06	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
PFNA			ND	1.42	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	-
PFOS			ND	1.02	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	
PFDA			QN	1.26	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	-
Mer USAA F4FOS A A			QN .	2.99	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
EIFUSAA			QN	1.90	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
PFUNA			QN	0.251	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
Pr DoA			QN.	0.937	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	
PFIrDA			ND	0.928	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
PFIEDA			ND	0.765	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	_
Labeled Standards	S	lype	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA		SURR	88.1		70 - 130			B8C0184	29-Mar-18	0.2541.	03-Anr-18 11-23	-
I3C2-PFDA		SURR	105		70 - 130			B8C0184	29-Mar-18	0.254 L	03-Apr-18 11-23	-
d5-EtFOSAA		SURR	95.0		70 - 130			B8C0184	29-Mar-18	0.254 L	03-Apr-18 11:23	
DL - Detection Limit		LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL-1 Results repo	LCL-UCL- Lower control li Results reported to the DL.	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	i.	When rep Only the l	orted, PFHxS, I	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes.	include both line ther analytes.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	· Se
										CONTROL SAMOREN VOTO PER PROPERTY NAMED		

TOWN OF COUPEVILLE & FT. CASEY TREATEMENT PLANT WELL 287 COUPEVILLE, WA 98239 WI-CV-1RW60-0318

MAY 3 1 2018

RECEIVED

TOWN OF COUPEVILLE

Date Collected: 3/23/2018 Time Collected: 08:45

Preliminary Results Provided: May 23, 2018

Below are the <u>preliminary</u> test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2018		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorooctane Sulfonate (PFOS)	ND	70	
Perfluorooctanoic acid (PFOA)	26.1	70	
PFOS and PFOA (cumulative) ¹	26.1	70	

¹ Only detected values of PFOS and PFOA are summed.

Results for other PFAS where no EPA Health Advisory Levels have been established

	March 2018		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorobutane sulfonate (PFBS)	7.17 J	Not applicable	
Perfluorohexanoic acid (PFHxA)	17.0	Not applicable	
Perfluoroheptanoic acid (PFHpA)	4.49 J	Not applicable	
Perfluorohexane sulfonate (PFHxS)	28.0	Not applicable	
Perfluorononanoic acid (PFNA)	ND	Not applicable	
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable	
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable	
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable	
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable	

ND - Analyte not detected in the sample

ppt - parts per trillion



Sample ID: WI-CV-1RW60-0318	I-CV-1RW6	0-0318									EPA Method 537	hod 537
Client Data Name: Project: Location:	CH2M Hill CTO-4041 N _k	CH2M Hill CTO-4041 Navy Clean NASWI DW	Matrix: Date Co	llected:	Drinking Water 23-Mar-18 08:45	Labo Lab S Date	Laboratory Data Lab Sample: Date Received:	1800572-05 27-Mar-18 09:39	3 09:39	Column:	m m	
Analyte			Conc. (ng/L)	DI	TOD	007	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS			7.17	0.438	4.94	9.90	l l	B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
PFHXA			17.0	0.862	4.94	06.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	
PrhpA Pris			4.49	0.527		9.90	ſ	B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
PFHXS			28.0	0.411		06.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
PENA			26.1	1.07	4.94	9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
PEOS			Q.	1.42	4.94	9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
rros pro 4			ND	1.03	4.94	9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
FFDA			NO	1.27	4.94	9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
EtEOS A A			QN ;	3.01	4.94	06.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
DEI USAAA			ON !	1.91		06.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
PEDA			QN :	0.252		9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
PETEDA			Q ;	0.942		06.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
PETADA			Q i	0.933		9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
I sholod Standards		E	ON	0.769		9.90		B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
Dalvered Stalluary	0	lype	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHXA		SURR	92.4		70 - 130			B8C0184	29-Mar-18	0.253 L.	03-Apr-18 11:48	-
13CZ-PFDA		SURR	103		70 - 130			B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	-
do-Etrosaa		SURR	74.4		70 - 130			B8C0184	29-Mar-18	0.253 L	03-Apr-18 11:48	_
DL - Detection Limit		LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UC Results n	LCL-UCL- Lower control Results reported to the DL	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	ii.	When rep Only the	oorted, PFHxS, F linear isomer is	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	include both line her analytes.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	· S

This section contains EPA Method 537 information used by Qualifiers "J" (Estimated Value) – indicates the value reported This column identifies the data qualifiers that apply the data validator. for the analyte is below the LOQ and was detected. to a given result. Possible laboratory qualifiers are: quality control 29-Mar-2017 30-Mar-2017 The value reported is considered estimated. 70 - 130 70 - 130 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers LCL-UCL Date Extracted: Date Received: 04-Apr-17 15:37 Column: BEH C18 %R 117 103 The detection limit (**DL**)is the lowest level at which the laboratory can reliably "see" The limit of detection (**LOD**) is the lowest level at which the laboratory can reliably reliably measure this compound with a known degree of confidence and accuracy. The limit of quantitation (LOQ) is the lowest level at which the laboratory can Only the linear isomer is reported for all other analytes. LCL-UCL - Lower control limit - upper control limit Labeled Standard B7C0165 SUR 13C2-PFHxA SUR 13C2-PFDA Results reported to DL Laboratory Data Date Analyzed: Lab Sample: QC Batch: Qualifiers PFBS was not detected in the sample. This is reported as "ND" (Non-Detect). was detected but the amount detected "see" this compound is not present. PFOA was detected in the sample at The "J" qualifier means that the PFOA Drinking Water that this compound is present. <u> 100</u> 17.3 0.289 L 6.53 ng/L (6.53 ppt). The result for PFOA: The result for PFBS: Sample Size: Sample Data LOD 8.65 8.65 8.65 Matrix: RL - Reporting limit DL - Detection limit is estimated. 3.02 3.93 2.64 D nanogram(s) part(s) per per liter trillion 1 ppt Conc. (ng/L) 6.53 ND WF-RW02-0317 1ng/L WF-RW02 Date Collected: Sample ID: Client Data Location Project: Name: Analyte

PFOA PFOS

PFBS

"B" (Blank) – this compound was also detected in the method blank.

PFOS was not detected in the sample.

The result for PFOS:

This is reported as "ND" (Non-Detect).

used to evaluate potential impact under the

Navy's Environmental Restoration Program. has health effects information that can be taken based on this result. This chemical

PFBS; therefore, no action is currently being

There is not a health advisory level for

"D" (Diluted Sample) – sample result was taken from a diluted sample.

compound with a known can reliably measure this compound is not present. The limit of quantitation qualifiers that apply (LOQ) is the lowest level which the laboratory can (LOD) is the lowest level at which the laboratory at which the laboratory The detection limit (DL) identifies the data degree of confidence The limit of detection can reliably "see" this compound is present. reliably "see" that this to a given result. is the lowest level at This column and accuracy. 0.045 0.00'88 LIMITS 70-130 70-130 DI ID: 2.1 (mm) xtracted: 12/02/2016 07:42 ollected: 11/28/2016 16:59 nalyzed: 12/07/2016 22:25 0.10 0.022 O 1,000 ppt $0.010 \, \mu g/L = 0.010 \, ppb = 10 \, ppt$ 101 0.13 0.028 SREC * 0.056 eanup:(Y/N) N LOO umn: Acquity on Factor: 1 LCMS ORGANICS ANALYSIS DATA SHEET mple ID: le ID: Units: ug/L Lab S Job Ne Dilut GPC C. GC Co. Date Date Date 0.015 $\mu g/L = 1 \mu g h$ RESULT FORM I microgram(s) SURROGATE Client Sample ID: WI-CV- -1116 Lab Name: TestAmerica Sacramento COMPOUND NAME. Con. Extract Vol.: 1.00(mL) Analysis Batch No.: 140946 Injection Volume: 10(uL) Sample wt/vol: 267.2(mL) 13C2 PFHxA 13C2 PFDA Extraction Method: 537 Analysis Method: 537 Matrix: Water % Moisture: CAS NO. SDG No.: CAS NO STL00993 the sample at 0.022 µg/L the sample at 0.015 µg/L to further verify the value the instrument produced. that the result detected that laboratory staff had PFBS was not detected PFOS was detected in not detected with a high that the compound was (0.022 ppb or 22 ppt). PFOA was detected in The "M" qualifier means The "J" qualifier means (0.015 ppb or 15 ppt). degree of confidence at The "U" qualifier means is an estimated level. The result for PFOS: The result for PFOA: The result for PFBS:* in the sample. the LOD.

* There is not a health advisory level for PFBS; therefore, no action is currently being taken based on this result. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration Program.

compound with a known compound is not present. can reliably measure this which the laboratory can The limit of quantitation (LOQ) is the lowest level qualifiers that apply at which the laboratory (LOD) is the lowest level at which the laboratory The detection limit (DL) identifies the data degree of confidence The limit of detection can reliably "see" this reliably "see" that this is the lowest level at to a given result. This column and accuracy. 0.045 0.00'88 0.015 LIMITS 70-130 ID: 2.1 (mm) xtracted: 12/02/2016 07:42 ollected: 11/28/2016 16:59 nalyzed: 12/07/2016 22:25 0.022 0.10 0.045 part(s) per trillion Q 1,000 ppt 101 $0.010 \,\mu g/L = 0.010 \,ppb = 10 \,ppt$ 0.056 0.028 0.13 &REC LOQ eanup: (Y/N) N umn: Acquity on Factor: 1 LCMS ORGANICS ANALYSIS DATA SHEET mple ID: le ID; Units: ug/L Job Ne Lab Sa Dilut Date Date GC Co. Date 0.015 $da_1 = 1/gu$ RESULT FORM I microgram(s) per liter SURROGATE Lab Name: TestAmerica Sacramento COMPOUND NAME Con. Extract Vol.: 1.00(mL) Analysis Batch No.: 140946 Sample wt/vol: 267.2(mL) Injection Volume: 10(uL) 13C2 PFHxA 13C2 PFDA Extraction Method: 537 Analysis Method: 537 Matrix: Water % Moisture: CAS NO. CAS NO STL00993 STL00996 the sample at 0.022 µg/L the sample at 0.015 µg/L to further verify the value the instrument produced. PFBS was not detected not detected with a high that laboratory staff had PFOS was detected in that the result detected (0.022 ppb or 22 ppt). PFOA was detected in The "M" qualifier means that the compound was degree of confidence at The "U" qualifier means The "J" qualifier means (0.015 ppb or 15 ppt). is an estimated level. The result for PFOS: The result for PFOA: The result for PFBS:* in the sample. the LOD.

compound is present.

There is not a health advisory level for PFBS; therefore, no action is currently being taken based on this result. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration Program.



Approach for Aquifer Testing at the Keystone Hill Well, Coupeville, Washington

PREPARED FOR:

Kendra Leibman,

NAVFAC Northwest RPM

PREPARED BY:

CH2M

DATE:

September 25, 2017

CONTRACT NUMBER:

CLEAN 9000 - CTO 4041

Introduction

The Town of Coupeville on Whidbey Island in Washington State operates a municipal drinking water well (Keystone Hill well) on the west side of Outlying Field (OLF), Whidbey Naval Air Station. The Keystone Hill well currently operates at 150 gpm for 21 to 23 hours per day. To satisfy increasing demand, the Town of Coupeville is considering the possibility of increasing the well's extraction rate up to approximately 300 gpm. However, PFAS has recently been detected in groundwater samples collected from the Keystone Hill well at concentrations near the EPA lifetime health advisory level and the Navy identified three groundwater monitoring wells at OLF that contain PFAS above EPA's lifetime health advisory level, one of which is less than 1000 feet southeast of the Keystone Hill well. The Town of Coupeville is concerned that increasing extraction rates may result in higher PFAS concentrations in water produced by the Keystone Hill well. NAVFAC and its consultant, CH2M, propose performing an aquifer test to better quantify aquifer hydraulic properties of the aquifer in the immediate vicinity of the Keystone Hill well.

Objectives

The results of the aquifer test along with installation of additional monitoring wells in the area are expected to provide additional information to meet the following objectives:

- Provide improved delineation of the hydraulic capture zone of the Keystone Hill well.
- Provide insight as to whether increased pumping at the Keystone Hill well could potentially
 result in increased PFAS concentrations (full evaluation related to this objective will require data
 from the pending/additional investigation of PFAS contamination at OLF).
- Improve delineation of PFAS concentrations in groundwater in the vicinity of the Keystone Hill well.

Approach

The following provides a summary of the approach and requirements for of the proposed aquifer test:

- CH2M plans to construct observation wells at two locations near the Keystone Hill well
 (Figure 11-1). Two adjacent wells will be drilled at each location, one screened in the surficial
 aquifer and one screened in the underlying confined aquifer, similar to the Keystone Hill well.
 Both of the proposed observation well locations are located on OLF property; the first location is
 150 feet due east of the Keystone Hill well, and the other location is approximately 260 feet
 northeast of the Keystone Hill well, just inside the OLF boundary.
- CH2M plans to collect groundwater samples from the four new observation wells, the Keystone Hill well, and five existing monitoring wells (MW-04M, MW-04S, MW-07M, MW-07S, and MW-14M) to record PFAS concentrations in the Keystone Hill well and surrounding monitoring wells before and after the test.
- CH2M plans to instrument the four new observation well pairs, the Keystone Hill well, and five
 existing monitoring wells (MW-04M, MW-04S, MW-07M, MW-07S, and MW-14M) with pressure
 transducers and data loggers to monitor groundwater levels over a 1 week long testing period.
- CH2M proposes to install a totalizer and data logger at the Keystone Hill well so accurate measurements of flow rates and drawdown can be recorded.
- CH2M proposes that the Keystone Hill well be shut down for up to approximately 4 hours prior
 to the start of the test. Initial test data for the Keystone Hill well indicate that groundwater
 levels in the vicinity of the Keystone Hill well should recover to a static level within 4 hours
 (Robinson Noble, 2008). No further shutdowns will be required during the test.
- After the initial 4-hour shutdown, the Town of Coupeville may return to normal operation of the Keystone Hill well.

References

Robinson and Noble. 2008. Town of Coupeville Keystone Hill Well Construction and Testing Report. Tacoma, Washington. April, 2008.

appropriate QC measures are documented demonstrating the CAL standard stability.

8. SAMPLE COLLECTION, PRESERVATION, AND STORAGE

8.1 SAMPLE BOTTLE PREPARATION

- 8.1.1 Samples must be collected in a 250-mL polypropylene bottle fitted with a polypropylene screw-cap.
- 8.1.2 The preservation reagent, listed in the table below, is added to each sample bottle as a solid prior to shipment to the field (or prior to sample collection).

Compound	Amount	Purpose
Trizma [®]	5.0 g/L	buffering reagent and removes free chlorine

8.2 SAMPLE COLLECTION

- 8.2.1 The sample handler must wash their hands before sampling and wear nitrile gloves while filling and sealing the sample bottles. PFAA contamination during sampling can occur from a number of common sources, such as food packaging and certain foods and beverages. Proper hand washing and wearing nitrile gloves will aid in minimizing this type of accidental contamination of the samples.
- 8.2.2 Open the tap and allow the system to flush until the water temperature has stabilized (approximately 3 to 5 min). Collect samples from the flowing system.
- 8.2.3 Fill sample bottles, taking care not to flush out the sample preservation reagent. Samples do not need to be collected headspace free.
- 8.2.4 After collecting the sample, cap the bottle and agitate by hand until preservative is dissolved. Keep the sample sealed from time of collection until extraction.

8.3 FIELD REAGENT BLANKS (FRB)

8.3.1 A FRB must be handled along with each sample set. The sample set is composed of samples collected from the same sample site and at the same time. At the laboratory, fill the field blank sample bottle with reagent water and preservatives, seal, and ship to the sampling site along with the sample bottles. For each FRB shipped, an empty sample bottle (no preservatives) must also be shipped. At the sampling site, the sampler must open the shipped FRB and pour the preserved reagent water into the empty shipped sample bottle, seal and label this bottle as the FRB. The FRB is shipped back to the laboratory along with the samples and analyzed to ensure that PFAAs were not introduced into the sample during sample collection/handling.

- 8.3.2 The same batch of preservative must be used for the FRBs as for the field samples.
- 8.3.3 The reagent water used for the FRBs must be initially analyzed for method analytes as a LRB and must meet the LRB criteria in Section 9.3.1 prior to use. This requirement will ensure samples are not being discarded due to contaminated reagent water rather than contamination during sampling.
- 8.4 SAMPLE SHIPMENT AND STORAGE Samples must be chilled during shipment and must not exceed 10 °C during the first 48 hours after collection. Sample temperature must be confirmed to be at or below 10 °C when the samples are received at the laboratory. Samples stored in the lab must be held at or below 6 °C until extraction, but should not be frozen.
 - NOTE: Samples that are significantly above 10° C, at the time of collection, may need to be iced or refrigerated for a period of time, in order to chill them prior to shipping. This will allow them to be shipped with sufficient ice to meet the above requirements.
- 8.5 SAMPLE AND EXTRACT HOLDING TIMES Results of the sample storage stability study (Table 10) indicated that all compounds listed in this method have adequate stability for 14 days when collected, preserved, shipped and stored as described in Sections 8.1, 8.2, and 8.4. Therefore, water samples should be extracted as soon as possible but must be extracted within 14 days. Extracts must be stored at room temperature and analyzed within 28 days after extraction. The extract storage stability study data are presented in Table 11.

9. QUALITY CONTROL

- QC requirements include the Initial Demonstration of Capability (IDC) and ongoing QC requirements that must be met when preparing and analyzing Field Samples. This section describes the QC parameters, their required frequencies, and the performance criteria that must be met in order to meet EPA quality objectives. The QC criteria discussed in the following sections are summarized in Tables 12 and 13. These QC requirements are considered the minimum acceptable QC criteria. Laboratories are encouraged to institute additional QC practices to meet their specific needs.
 - 9.1.1 METHOD MODIFICATIONS The analyst is permitted to modify LC columns, LC conditions, evaporation techniques, internal standards or surrogate standards, and MS and MS/MS conditions. Each time such method modifications are made, the analyst must repeat the procedures of the IDC. Modifications to LC conditions should still produce conditions such that co-elution of the method analytes is minimized to reduce the probability of suppression/enhancement effects.

Town of Coupeville and Fort Casey Treatment Plant 434 Wanamaker Road WI-CV-1RW60-0117 (Well 2-87) 01/18/2017 09:31 Preliminary Results Provided March 27, 2017 Validated Results Provided April 24, 2017

and the desired

Below are the <u>validated</u> test results for your drinking water sampled on January 18, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Jan 2017	11lab A.J. :/
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	49 U	70
Perfluorooctanoic acid (PFOA)	24 U	70
PFOS and PFOA (cumulative) ¹	Not Detected	70

¹Only detected values of PFOS and PFOA are summed.

	Jan 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	110 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

Lab Name: TestAmerica Sacramento

SDG No.:

Client Sample ID: WI-CV-1RW60-0117

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Sample wt/vol: 246.4(mL)

Con. Extract Vol.: 1(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No . 147664

Job No.: 320-25119-1

Lab Sample ID: 320-25119-3

Lab File ID: 24JAN2017A6A_046.d

Date Collected: 01/18/2017 09:31

Date Extracted: 01/21/2017 11:49

Date Analyzed: 01/25/2017 13:18

Dilution Factor: 1

GC Column: Acquity

ID: 2.1(mm)

GPC Cleanup: (Y/N) N

analysis Bat	ich No.: 147664	Units:	ug/L			
CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.049	U	0.061	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0096
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048
CAS NO.	SURROGA	TE.		%REC	Q	LIMITS
STL00993	13C2 PFHxA			100		70-130
STL00996	13C2 PFDA			104		70-130

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com 504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-002

Sampling Date

11/10/2016 11:00 AM

Date/Time Received

11/11/2016 11:08 AM

Matrix

COCPFC02 **Drinking Water** Sampling Time

Sample Location

Extraction Date 11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	0.00801	ug/L	0.01	11/28/2016	TGT	EPA 537	J
Perfluorohexanesulfonic acid - PFHxS	0.0367	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	0.0558	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number

Surrogate Standard	Method	Percent Recovery	Control Limits
13C-PFDA	EPA 537	94.9	70-130
13C-PFHxA	EPA 537	98.0	70-130

Sample Number
Client Sample ID

161114025-003 COCPFC03 **Drinking Water**

Sampling Date Sampling Time Sample Location 11/10/2016 10:40 AM

Date/Time Received

11/11/2016 11:08 AM

11/18/2016 **Extraction Date**

Comments

Matrix

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-003			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	87.5	70-130
13C-PFHxA	4	EPA 537	88.4	70-130

Town of Coupeville and Fort Casey Treatment Plant 466 Keystone Hill Road WI-CV-1RW24-1216 (Well 487) 12/06/2016 09:45 Preliminary Results Provided January 23, 2017 Validated Results Provided April 24, 2017

Below are the <u>validated</u> test results for your drinking water sampled on December 6, 2016. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	11 t-
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	45 U	70
Perfluorooctanoic acid (PFOA)	22 U	70
PFOS and PFOA (cumulative) ¹	Not Detected	70

¹Only detected values of PFOS and PFOA are summed.

	Dec 2016	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	100 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento	Job No.: 320-24178-1			
SDG No.:				
Client Sample ID: WI-CV-1RW24-1216	Lab Sample ID: 320-24178-4			
Matrix: Water	Lab File ID: 15DEC2016A6A	012.d		
Analysis Method: 537	Date Collected: 12/06/2016	09:45		
Extraction Method: 537	Date Extracted: 12/09/2016 18:59			
Sample wt/vol: 267.4(mL)	Date Analyzed: 12/15/2016	12:59		
Con. Extract Vol.: 1.00(mL)	Dilution Factor: 1			
Injection Volume: 10(uL)	GC Column: Acquity	ID: 2.1(mm)		
% Moisture:	GPC Cleanup: (Y/N) N			
Analysis Batch No.: 142223	Units: ug/L			

CAS NO.	COMPOUND NAME	RESULT	Q	TOÖ	LOD	DL
1763-23-1	Perfluorocctanesulfonic acid (PFOS)	0.045		0.056	0.045	0.014
335-67-1	Perfluorocctancic acid (PFOA)	0.022		0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	91		70-130

Town of Coupeville and Fort Casey Treatment Plant 466 Keystone Hill Road WI-CV-1RW25-1216 (Well 106) 12/06/2016 10:00 Preliminary Results Provided January 23, 2017 Validated Results Provided April 24, 2017

Below are the <u>validated</u> test results for your drinking water sampled on December 6, 2016. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory (ppt)	
Chemical Name	Result (ppt)		
Perfluorooctane Sulfonate (PFOS)	44 U	70	
Perfluorooctanoic acid (PFOA)	22 U	70	
PFOS and PFOA (cumulative) ¹	Not Detected	70	

¹Only detected values of PFOS and PFOA are summed.

	Dec 2016		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorobutanesulfonic acid (PFBS)	100 U	Not applicable	

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento	Job No.: 320-24178-1
SDG No.:	
Client Sample ID: WI-CV-1RW25-1216	Lab Sample ID: 320-24178-6
Matrix: Water	Lab File ID: 15DEC2016A6A 014.d
Analysis Method: 537	Date Collected: 12/06/2016 10:00
Extraction Method: 537	Date Extracted: 12/09/2016 18:59
Sample wt/vol: 271.7(mL)	Date Analyzed: 12/15/2016 14:25
Con. Extract Vol.: 1.00(mL)	Dilution Factor: 1
Injection Volume: 10(uL)	GC Column: Acquity ID: 2.1(mm)
% Moisture:	GPC Cleanup: (Y/N) N
Analysis Batch No.: 142223	Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorcoctanesulfonic acid (PFOS)	0.044	L.	0.055	0.044	0.01
335-67-1	Perfluorocctanoic acid (PFOA)	0.022	U	0.028	0.022	0.008
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	V	0.13	0.10	0.04

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA			
STL00996	13C2 PFDA	51.7		70-130
	13CZ FIDA	92		70-130

Town of Coupeville and Fort Casey Treatment Plant 466 Keystone Hill Road WI-CV-1RW26-1216 (Well 190) 12/06/2016 10:12 Preliminary Results Provided January 23, 2017 Validated Results Provided April 24, 2017

Below are the <u>validated</u> test results for your drinking water sampled on December 6, 2016. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory (ppt)	
Chemical Name	Result (ppt)		
Perfluorooctane Sulfonate (PFOS)	44 U	70	
Perfluorooctanoic acid (PFOA)	22 U	70	
PFOS and PFOA (cumulative) ¹	Not Detected	70	

¹Only detected values of PFOS and PFOA are summed.

	Dec 2016		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorobutanesulfonic acid (PFBS)	100 U	Not applicable	

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento	Job No.: 320-24178-1
SDG No.:	
Client Sample ID: WI-CV-1RW26-1216	Lab Sample ID: 320-24178-8
Matrix: Water	Lab File ID: 15DEC2016A6A 018.d
Analysis Method: 537	Date Collected: 12/06/2016 10:12
Extraction Method: 537	Date Extracted: 12/09/2016 18:59
Sample wt/vol: 270.3(mL)	Date Analyzed: 12/15/2016 16:24
Con. Extract Vol.: 1.00(mL)	Dilution Factor: 1
Injection Volume: 10(uL)	GC Column: Acquity ID: 2.1(mm)
% Moisture:	GPC Cleanup: (Y/N) N
Analysis Batch No.: 142412	Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	100		70-130
STL00996 '	13C2 PFDA	97		70-130

Town of Coupeville and Fort Casey Treatment Plant 466 Keystone Hill Road WI-CV-1RW27-1216 (Post-Treatment) 12/06/2016 10:24 Preliminary Results Provided January 23, 2017 Validated Results Provided April 24, 2017

Below are the <u>validated</u> test results for your drinking water sampled on December 6, 2016. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	11 -101 - 6 1 1 - 7 - 1	
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorooctane Sulfonate (PFOS)	47 U	70	
Perfluorooctanoic acid (PFOA)	38	70	
PFOS and PFOA (cumulative) ¹	38	70	

¹Only detected values of PFOS and PFOA are summed.

	Dec 2016	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	110 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-24178-1 SDG No.: Client Sample ID: WI-CV-1RW27-1216 Lab Sample ID: 320-24178-10 Matrix: Water Lab File ID: 15DEC2016A6A 020.d Analysis Method: 537 Date Collected: 12/06/2016 10:24 Extraction Method: 537 Date Extracted: 12/09/2016 18:59 Sample wt/vol: 254.4(mL) Date Analyzed: 12/15/2016 17:23 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm) % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 142412 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluoroctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluoroctanoic acid (PFOA)	0.038		0.029	0.024	0.0093
375-73-5	Perfluorobutanesultonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Ď	LIMITS
STL00993	13C2 PFHxA	114		70-130
STL00996	13C2 PFDA	112		70-130

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Road WI-CV-1RW23-1216 (Well 108) 12/06/2016 09:21 Preliminary Results Provided January 23, 2017 Validated Results Provided April 24, 2017

Below are the validated test results for your drinking water sampled on November 29, 2016. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation, "M" flags were removed from the final qualifier. "M" has no impact on the quality of the data from manual integrations.

The Navy's Environmental Restoration Program analyzed three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy only reports these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Nov 2016		
Chemical Name	Result (ppt)	Health Advisory (ppt)	
Perfluorooctane Sulfonate (PFOS)	44 U	70	
Perfluorooctanoic acid (PFOA)	22 U	70	
PFOS and PFOA (cumulative) ¹	Not Detected	70	

¹Only detected values of PFOS and PFOA are summed.

	Nov 2016	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	100 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-24178-1 SDG No.: Client Sample ID: WI-CV-1RW23-1216 Lab Sample ID: 320-24178-1 Matrix: Water Lab File ID: 15DEC2016A6A_009.d Analysis Method: 537 Date Collected: 12/06/2016 09:21 Extraction Method: 537 Date Extracted: 12/09/2016 18:59 Sample wt/vol: 273.4(mL) Date Analyzed: 12/15/2016 11:30 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm) % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 142223 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	0 1	0.055	0.044	0.014
335-67-1	Perfluorocctanoic acid (PFCA)	0.055		0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE ,	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70 120
STL00996	13C2 PFDA			70-130
	100E TIDA	95		70-130

Town of Coupeville and Ft. Casey Treatment Plant (POC: Joe Grogan) 434 Wanamaker Road WI-CV-1RW85-0217 (Well #1-87) 3/3/2017 13:38
Preliminary Results Provided April 10, 2017 Validated Results Provided June 12, 2017

Below are the <u>validated</u> test results for your drinking water sampled on March 3, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2017		
Chemical Name	Result (ppt)	Health Advisory (ppt	
Perfluorooctane Sulfonate (PFOS)	50 U	70	
Perfluorooctanoic acid (PFOA)	25 U	70	
PFOS and PFOA (cumulative) ¹	Not Detected	70	

¹Only detected values of PFOS and PFOA are summed.

	March 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	120 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26309-1 SDG No.: Client Sample ID: WI-CV-1RW85-0217 Lab Sample ID: 320-26309-1 Matrix: Water Lab File ID: 2017.03.09_537A_020.d Analysis Method: 537 Date Collected: 03/03/2017 13:38 Extraction Method: 537 Date Extracted: 03/07/2017 17:54 Sample wt/vol: 239(mL) Date Analyzed: 03/09/2017 11:06 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 154110 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	102		70-130

Town of Coupeville and Ft. Casey Treatment Plant (POC: Joe Grogan)
434 Wanamaker Road
WI-CV-1RW86-0217 (Well #3-87)
3/3/2017
14:15
Preliminary Results Provided April 10, 2017
Validated Results Provided June 12, 2017

Below are the <u>validated</u> test results for your drinking water sampled on March 3, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	53 U	70
Perfluorooctanoic acid (PFOA)	27 U	70
PFOS and PFOA (cumulative) ¹	Not Detected	70

¹ Only detected values of PFOS and PFOA are summed.

	March 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	120 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

Lab Name: TestAmerica Sacramento	Job No.: 320-26309-1		
SDG No.:			
Client Sample ID: WI-CV-1RW86-0217	Lab Sample ID: 320-26309-3		
Matrix: Water	Lab File ID: 2017.03.09_537A_022.d		
Analysis Method: 537	Date Collected: 03/03/2017 14:15		
Extraction Method: 537	Date Extracted: 03/07/2017 17:54		
Sample wt/vol: 226.3(mL)	Date Analyzed: 03/09/2017 11:15		
Con. Extract Vol.: 1.00(mL)	Dilution Factor: 1		
Injection Volume: 2(uL)	GC Column: GeminiC18 3x100 ID: 3(mm)		
% Moisture: GPC Cleanup:(Y/N) N			
Analysis Batch No.: 154110	Units: ug/L		

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.053	U	0.066	0.053	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.027	U	0.033	0.027	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.053

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHXA	88		70-130
STL00996	13C2 PFDA	94		70-130

Town of Coupeville and Ft. Casey Treatment Plant (POC: Joe Grogan)
434 Wanamaker Road
WI-CV-1RW87-0217 (Well #3A)
3/3/2017
14:49
Preliminary Results Provided April 10, 2017
Validated Results Provided June 12, 2017

Below are the <u>validated</u> test results for your drinking water sampled on March 3, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Based upon the completion of data validation no results or qualifier flags have changed for the test results listed below.

The Navy's Environmental Restoration Program analyzed for three per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation, which include PFOA, PFOS, and Perfluorobutanesulfonic acid (PFBS). The Navy reports only these PFAS because these are the only three for which the EPA has established human health exposure information. PFOA and PFOS are the only PFAS that EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

The Navy also reports PFBS in the lab reports because this compound has health effects information that can be used to evaluate potential impact in the Navy's Environmental Restoration Program. If the EPA sets a health advisory for PFBS in the future, then the Navy will evaluate necessary actions to take based on the health advisory.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2017	11lab A.I. : ()
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	52 U	70
Perfluorooctanoic acid (PFOA)	26 U	70
PFOS and PFOA (cumulative) ¹	Not Detected	70

¹ Only detected values of PFOS and PFOA are summed.

	March 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)	120 U	Not applicable

J - Analyte present, but result is estimated

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

U- Analyte not detected in the sample

Lab Name: TestAmerica Sacramento	Job No.: 320-26309-1
SDG No.:	
Client Sample ID: WI-CV-1RW87-0217	Lab Sample ID: 320-26309-5
Matrix: Water	Lab File ID: 2017.03.09_537A_024.d
Analysis Method: 537	Date Collected: 03/03/2017 14:49
Extraction Method: 537	Date Extracted: 03/07/2017 17:54
Sample wt/vol: 230(mL)	Date Analyzed: 03/09/2017 11:24
Con. Extract Vol.: 1.00(mL)	Dilution Factor: 1
Injection Volume: 2(uL)	GC Column: GeminiC18 3x100 ID: 3(mm)
% Moisture:	GPC Cleanup: (Y/N) N
Analysis Batch No.: 154110	Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.052	U	0.065	0.052	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.026	Ū	0.033	0.026	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.052

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	100		70-130

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

Matrix

JOSEPH GROGAN

Batch #:

170329059

Project Name:

537

PWS #:

155509

Analytical Results Report

Sample Number Client Sample ID 170329059-001 DIST

Drinking Water

Sampling Date Sampling Time Facility ID

3/28/2017 2:00 PM

Date/Time Received **Extraction Date**

3/29/2017 1:55 PM 4/3/2017

Sample Point ID

Sample Location

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	4/4/2017	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	< 0.005	ug/L	0.01	4/4/2017	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	0.0292	ug/L	0.03	4/4/2017	TGT	EPA 537	J
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	4/4/2017	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.04	4/4/2017	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	0.0362	ug/L	0.02	4/4/2017	TGT	EPA 537	

Surrogate Data

ample Number	170329059-001				
Surrogate	Standard	Method	Percent Recovery	Control Limits	
13C-PFDA		EPA 537	86.0	70-130	
13C-PFHx/	A	EPA 537	83.6	70-130	

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

Batch #:

170329059

Project Name:

537

PWS #:

155509

Analytical Results Report

Sample Number

170329059-002

Sampling Date Sampling Time

3/28/2017 1:40 PM

Date/Time Received **Extraction Date**

1:55 PM 3/29/2017 4/3/2017

Client Sample ID Matrix Sample Location 1-08 **Drinking Water**

Facility ID Comments

Sample Point ID

1

Qualifier Method Units Analysis Date Analyst Result **Parameter EPA 537** 4/4/2017 **TGT** Perfluorobutanesulfonic acid - PFBS ND ug/L 0.09 J Perfluoroheptanoic acid - PFHpA 0.00900 ug/L 0.01 4/4/2017 **TGT** EPA 537 Perfluorohexanesulfonic acid - PFHxS 4/4/2017 TGT **EPA 537** 0.0570 ug/L 0.03 4/4/2017 **TGT EPA 537** 0.02 ND ug/L Perfluorononanoic aid - PFNA **TGT EPA 537** ND ug/L 0.04 4/4/2017 Perfluorooctanesulfonic acid - PFOS TGT **EPA 537** 0.02 4/4/2017 Perfluorooctanoic acid - PFOA 0.0642 ug/L

Surrogate Data

ample Number	170329059-002				
Surrogate	Standard	Method	Percent Recovery	Control Limits	
13C-PFDA		EPA 537	93.0	70-130	
13C-PFHxA		EPA 537	90.6	70-130	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Page 2 of 3 Friday, April 07, 2017

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

Batch #:

170329059

Project Name:

537

PWS #:

155509

Analytical Results Report

Sample Number

170329059-003

Sampling Date Sampling Time 3/28/2017 1:40 PM

Date/Time Received **Extraction Date**

3/29/2017 4/3/2017

1:55 PM

Client Sample ID Matrix Sample Location 2-87 **Drinking Water**

Facility ID Comments

Sample Point ID

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifie
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	4/4/2017	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	4/4/2017	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	4/4/2017	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	4/4/2017	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.04	4/4/2017	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	4/4/2017	TGT	EPA 537	

Surrogate Data

ample Number	170329059-003				
Surrogate Standard		Method	Percent Recovery	Control Limits	
13C-PFDA		EPA 537	80.8	70-130	
		EPA 537	81.6	70-130	
13C-PFHxA	13C-PFHxA	EPA 557	01.0	0.50	

Authorized Signature

Kathy Sattler, Lab Manager

The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

EPA's Maximum Contaminant Level MCL

Not Detected ND

Practical Quantitation Limit PQL

This report shall not be reproduced except in full, without the written approval of the laboratory.

The results reported relate only to the samples indicated.

Soil/solid results are reported on a dry-weight basis unless otherwise noted

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Page 3 of 3 Friday. April 07. 2017

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Client:

TOWN OF COUPEVILLE

Address:

A Section 1

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number 161114025-001 Sampling Date 11/10/20 Client Sample ID COCPFC01 Sampling Time 10:40 A Matrix Drinking Water Sample Location Comments	THE RECEIVED THE PROPERTY OF T
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Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	Qualifier
Perfluoroheptanoic acid - PFHpA	0.00923	ug/L	0.01	11/28/2016	TGT	EPA 537	ř
Perfluorohexanesulfonic acid - PFHxS	0.0465	ug/L	0.03	11/28/2016	TGT	EPA 537	J
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	0.0622	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-001				
Surrogate	Standard	Method	Percent Recovery	Control Limits	
13C-PFDA		EPA 537	100.6	70-130	
13C-PFHxA		EPA 537	95.1	70-130	

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number	161114025-004
Client Sample ID	COCPFC04
Matrix	Drinking Water

Sampling Date Sampling Time Sample Location 11/10/2016 **Date/Time** 11:25 AM **Extraction**

Date/Time Received

11/11/2016 11:08 AM

Extraction Date 11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-004				
Surrogate Standard	Method	Percent Recovery	Control Limits		
13C-PFDA		EPA 537	91.6	70-130	
13C-PFHxA		EPA 537	91.0	70-130	

Sample Number Client Sample ID Matrix 161114025-005 COCPFC05 Drinking Water

Sampling Date Sampling Time Sample Location 11/10/2016 11:50 AM Date/Time Received Extraction Date 11/11/2016 11:08 AM

11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-005			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	83.9	70-130
13C-PFHxA	A	EPA 537	88.6	70-130

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number	161114025-006
Client Sample ID	COCPFC06/07
Matrix	Drinking Water

Sampling Date Sampling Time

11/10/2016 12:15 PM

Date/Time Received

Extraction Date

11/11/2016 11:08 AM

11/18/2016

Sample Location

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	0.0184	ug/L	0.03	11/28/2016	TGT	EPA 537	J
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	•
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	0.0270	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

ample Number	161114025-006			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	84.4	70-130
13C-PFHxA	EPA 537	82.1	70-130	

Sample Number
Client Sample ID
Matrix

161114025-007 COCPFC08 Drinking Water

Sampling Date Sampling Time Sample Location 11/10/2016 12:16 PM

Date/Time Received **Extraction Date**

11/11/2016 11:08 AM

11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	4
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-007			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	93.8	70-130
13C-PFHxA	A	EPA 537	89.4	70-130

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Client:

TOWN OF COUPEVILLE

Address:

1-11-11

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-008 COCPFC09

Sampling Date Sampling Time 11/10/2016 12:30 PM

Date/Time Received

11/11/2016 11:08 AM

Matrix

Drinking Water

Sample Location

11/18/2016 **Extraction Date**

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	0.0205	ug/L	0.03	11/28/2016	TGT	EPA 537	J
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	0.0246	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-008

Surrogate Standard	Method	Percent Recovery	Control Limits
13C-PFDA	EPA 537	85.5	70-130
13C-PFHxA	EPA 537	88.9	70-130

Sample Number Client Sample ID Matrix

161114025-009 COCPFC10 **Drinking Water**

Sampling Date Sampling Time Sample Location 11/10/2016 12:45 PM

Date/Time Received **Extraction Date**

11/11/2016 11:08 AM

11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-009			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	91.4	70-130
13C-PFHxA	A	EPA 537	90.8	70-130

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Client:

TOWN OF COUPEVILLE

Address:

1 3 2 3 5

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-010 COCPFC00

Sampling Date Sampling Time

11/10/2016 10:00 AM

Date/Time Received

11/11/2016 11:08 AM

Matrix

Drinking Water

Sample Location

11/18/2016 **Extraction Date**

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	11/28/2016	TGT	EPA 537	
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number

161114025-010

Surrogate Standard 13C-PFDA 13C-PFHxA

Method **EPA 537 EPA 537** Percent Recovery 82.8

80.0

Control Limits 70-130 70-130

Authorized Signature

Kathy Sattler, Lab Manager

MCL

EPA's Maximum Contaminant Level

ND

Not Detected

PQL

Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.

The results reported relate only to the samples indicated.

Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Enclosure 5

Understanding Your Data Results:

You will notice that the data report comes with several laboratory descriptions that may not be familiar to you. The following definitions of those descriptions may assist you in understanding your sample results:

- Limit of Quantitation (LOQ) the lowest amount of an analyte (chemical or substance of interest) that can be detected and measured by the laboratory with confidence. Amounts detected below the LOQ are qualified as estimated (J).
- Limit of Detection (LOD) an estimated amount of an analyte (chemical or substance of interest) that can be detected by the laboratory. LOD is determined by testing a known amount of analyte through the analytical process.
- Method Detection Limit (MDL) a calculated determination of the minimum amount of an analyte (chemical or substance of interest) that can be detected by the laboratory.
- "J" Qualifier Code indicates the value reported for the analyte is below the LOQ and was detected. The value reported is considered estimated.
- "D" Qualifier Code The reported value is from a dilution.
- "M" Qualifier Code The compound required manual integration. The automated software
 performed an error requiring a qualified analyst to correct the quantitation of the compound.
- "U" Qualifier Code indicates that the compound was not detected.
- "E" Qualified Code indicates the value reported is estimated due to compound being detected above the laboratory's calibration range (sample re-analyzed at a dilution).
- **Surrogate** A surrogate substance is added to the sample as a way to ensure quality control during the analytical process.

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Rd WI-CV-1RW23-1216 (Well 108) 12/06/2016 09:21

Below are the preliminary, unvalidated test results for the December 6, 2016 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory
Chemical Name	Result (ppt)	(ppt)
Perfluorooctane Sulfonate (PFOS)	44 U M	70
Perfluorooctanoic acid (PFOA)	55	70
PFOS and PFOA (cumulative)	55	70

Dec 2016		
Result (ppt)		Health Advisory (ppt)
100 U	N/A	NA NA
	Result (ppt)	Result (ppt) Health Advisory (pp)

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento

Job No.: 320-24178-1

SDG No.:

Client Sample ID: WI-CV-1RW23-1216

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Sample wt/vol: 273.4(mL)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No.: 142223

Lab Sample ID: 320-24178-1

Lab File ID: 15DEC2016A6A_009.d

Date Collected: 12/06/2016 09:21

Date Extracted: 12/09/2016 18:59

Date Analyzed: 12/15/2016 11:30

Dilution Factor: 1

GC Column: Acquity

ID: 2.1(mm)

GPC Cleanup: (Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.055		0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	% REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	95		70-130

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Rd WI-CV-1RW24-1216 (Well 487) 12/06/2016 09:45

Below are the preliminary, unvalidated test results for the December 6, 2016 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory	
Chemical Name	Result (ppt)	(ppt)	
Perfluorooctane Sulfonate (PFOS)	45 U	70	
Perfluorooctanoic acid (PFOA)	22 U	70	
PFOS and PFOA (cumulative)	Not Detected	70	

	Dec 2016	II - III A I I	
Chemical Name	Result (ppt)	Health Advisory (pp)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS) ¹	100 U	N/A	NA

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento

Job No.: 320-24178-1

SDG No.:

Client Sample ID: WI-CV-1RW24-1216

Lab Sample ID: 320-24178-4

Matrix: Water

Lab File ID: 15DEC2016A6A_012.d

Analysis Method: 537

Date Collected: 12/06/2016 09:45

Extraction Method: 537

Sample wt/vol: 267.4(mL)

Date Extracted: 12/09/2016 18:59

Date Analyzed: 12/15/2016 12:59

Dilution Factor: 1

Con. Extract Vol.: 1.00(mL) Injection Volume: 10(uL)

Analysis Batch No.: 142223

GC Column: Acquity

ID: 2.1(mm)

% Moisture:

GPC Cleanup: (Y/N) N

Units: ug/L

	CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1	763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U	0.056	0.045	0.014
2	25 67 1	D61					

	acid (PFOS)	0.045	Ü	0.036	0.045	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q LIMITS
STL00993	13C2 PFHxA	94	70-130
STL00996	13C2 PFDA	91	70-130

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Rd WI-CV-1RW25-1216 (Well 106) 12/06/2016 10:00

Below are the preliminary, unvalidated test results for the December 6, 2016 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	Dec 2016	Health Advisory
	Result (ppt)	(ppt)
Perfluorooctane Sulfonate (PFOS)	44 U	70
Perfluorooctanoic acid (PFOA)	22 U	70
PFOS and PFOA (cumulative)	10 U	70

	Dec 2016	Hamilah a L	
Chemical Name	Result (ppt)	Health Advisory (pp)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS)1	100 U	N/A	NA

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento

Job No.: 320-24178-1

SDG No.:

Client Sample ID: WI-CV-1RW25-1216

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Sample wt/vol: 271.7(mL)

1 -1 -1 -1 -1 (1111)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No.: 142223

Lab Sample ID: 320-24178-6

Lab File ID: 15DEC2016A6A_014.d

Date Collected: 12/06/2016 10:00

Date Extracted: 12/09/2016 18:59

Date Analyzed: 12/15/2016 14:25

Dilution Factor: 1

GC Column: Acquity

ID: 2.1(mm)

GPC Cleanup: (Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	Ū	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	92		70-130

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Rd WI-CV-1RW26-1216 (Well 190) 12/06/2016 10:12

Below are the preliminary, unvalidated test results for the December 6, 2016 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory (ppt)	
Chemical Name	Result (ppt)		
Perfluorooctane Sulfonate (PFOS)	44 U	70	
Perfluorooctanoic acid (PFOA)	22 U	70	
PFOS and PFOA (cumulative)	Not Detected	70	

	Dec 2016		Health Advisory	
Chemical Name	Result (ppt)	Health Advisory (pp)		
Perfluorobutanesulfonic acid (PFBS) ¹	100 U	N/A	NA	

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento

Job No.: 320-24178-1

SDG No.:

Client Sample ID: WI-CV-1RW26-1216

Matrix: Water

Analysis Method: 537

Extraction Method: 537

Exclaction Method: 537

Sample wt/vol: 270.3(mL)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 10(uL)

% Moisture:

Analysis Batch No.: 142412

Lab Sample ID: 320-24178-8

Lab File ID: 15DEC2016A6A_018.d

Date Collected: 12/06/2016 10:12

Date Extracted: 12/09/2016 18:59

Date Analyzed: 12/15/2016 16:24

Dilution Factor: 1

GC Column: Acquity

ID: 2.1(mm)

GPC Cleanup: (Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	Ū	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFH×A	100		70-130
STL00996	13C2 PFDA	97		70-130

Town of Coupeville & Ft. Casey Treatment Plant 466 Keystone Hill Rd WI-CV-1RW27-1216 (Post-Treatment) 12/06/2016 10:24

Below are the preliminary, unvalidated test results for the December 6, 2016 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Dec 2016	Health Advisory (ppt)	
Chemical Name	Result (ppt)		
Perfluorooctane Sulfonate (PFOS)	47 U	70	
Perfluorooctanoic acid (PFOA)	38	70	
PFOS and PFOA (cumulative)	38	70	

	Dec 2016		
Chemical Name	Result (ppt)	Health Advisory (pp)	Health Advisory (ppt)
Perfluorobutanesulfonic acid (PFBS) ¹	110 U	N/A	NA

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento

Job No.: 320-24178-1

SDG No.:

Client Sample ID: WI-CV-1RW27-1216

Lab Sample ID: 320-24178-10

Matrix: Water

Lab File ID: 15DEC2016A6A 020.d

Analysis Method: 537

Date Collected: 12/06/2016 10:24

Extraction Method: 537

Date Extracted: 12/09/2016 18:59

Sample wt/vol: 254.4(mL)

Date Analyzed: 12/15/2016 17:23

Con. Extract Vol.: 1.00(mL)

Dilution Factor: 1 GC Column: Acquity

ID: 2.1(mm)

Injection Volume: 10(uL)

GPC Cleanup: (Y/N) N

% Moisture:

Analysis Batch No.: 142412

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.038		0.029	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC Q	LIMITS
STL00993	13C2 PFHxA	114	70-130
STL00996	13C2 PFDA	112	70-130

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (POC: Joe Grogan) 434 WANAMAKER RD WI-CV-1RW85-0217 (Well #1-87) 3/3/17 13:38

Below are the preliminary, unvalidated test results for the March 3, 2017 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's (EPA's) lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chamical Name	Mar 2017	Health Advisory (ppt)	
Chemical Name	Result (ppt)	(ppt)	
Perfluorooctane Sulfonate (PFOS)	50 U	70	
Perfluorooctanoic acid (PFOA)	25 U	70	
PFOS and PFOA (cumulative)	Not Detected	70	

	Feb 2017	Health Advisory	Health Advisory
Chemical Name	Result (ppt)	(pp)	(ppt)
Perfluorobutanesulfonic acid (PFBS) ¹	120 U	N/A	NA

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento Job No.: 320-26309-1

SDG No.:

Client Sample ID: WI-CV-1RW85-0217 Lab Sample ID: 320-26309-1

Matrix: Water

Lab File ID: 2017.03.09 537A 020.d Analysis Method: 537 Date Collected: 03/03/2017 13:38

Extraction Method: 537 Date Extracted: 03/07/2017 17:54 Sample wt/vol: 239(mL)

Date Analyzed: 03/09/2017 11:06

Con. Extract Vol.: 1.00 (mL)

Dilution Factor: 1

Injection Volume: 2(uL)

GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture:

GPC Cleanup: (Y/N) N

Analysis Batch No.: 154110

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	102		70-130

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (POC: Joe Grogan) 434 WANAMAKER RD WI-CV-1RW86-0217 (Well #3-87) 3/3/17 14:15

Below are the preliminary, unvalidated test results for the March 3, 2017 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's (EPA's) lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Mar 2017	Health Advisory (ppt)		
Chemical Name	Result (ppt)			
Perfluorooctane Sulfonate (PFOS)	53 U	70		
Perfluorooctanoic acid (PFOA)	27 U	70		
PFOS and PFOA (cumulative)	Not Detected	70		

Feb 2017			
Result (ppt)		Health Advisory (ppt)	
120 U		NA	
	Result (ppt)	Result (ppt) Health Advisory (pp)	

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento Job No.: 320-26309-1 SDG No.: Client Sample ID: WI-CV-1RW86-0217 Lab Sample ID: 320-26309-3 Matrix: Water Lab File ID: 2017.03.09_537A_022.d Analysis Method: 537 Date Collected: 03/03/2017 14:15 Extraction Method: 537 Date Extracted: 03/07/2017 17:54 Sample wt/vol: 226.3(mL) Date Analyzed: 03/09/2017 11:15 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 154110 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DГ
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.053	U	0.066	0.053	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.027	U	0.033	0.027	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.053

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	88		70-130
STL00996	13C2 PFDA	94		70-130

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (POC: Joe Grogan) 434 WANAMAKER RD WI-CV-1RW87-0217 (Well #3A) 3/3/17 14:49

Below are the preliminary, unvalidated test results for the March 3, 2017 sample of your drinking water. These initial results indicate that your drinking water sample is below the U.S. Environmental Protection Agency's (EPA's) lifetime health advisory level for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required at your property at this time. Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy is continuing to work in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to develop a long-term solution associated with PFAS in drinking water and groundwater resulting from activities at OLF Coupeville and Ault Field.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	Mar 2017	Health Advisory (ppt)		
Chemical Name	Result (ppt)			
Perfluorooctane Sulfonate (PFOS)	52 U	70		
Perfluorooctanoic acid (PFOA)	26 U	70		
PFOS and PFOA (cumulative)	Not Detected	70		

Feb 2017		Health Advisory (ppt)	
Result (ppt)			
120 U	N/A	NA	
	Result (ppt)	Result (ppt) Health Advisory (pp)	

J - Analyte present, but result is estimated

U- Analyte not detected in the sample

^{1,} There is not a health advisory level for this chemical and therefore no action is currently being taken based on this result. This compound was analyzed for per Navy policy. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration program.

Lab Name: TestAmerica Sacramento Job No.: 320-26309-1 SDG No.: Client Sample ID: WI-CV-1RW87-0217 Lab Sample ID: 320-26309-5 Matrix: Water Lab File ID: 2017.03.09_537A_024.d Analysis Method: 537 Date Collected: 03/03/2017 14:49 Extraction Method: 537 Date Extracted: 03/07/2017 17:54 Sample wt/vol: 230(mL) Date Analyzed: 03/09/2017 11:24 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 154110 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.052	U	0.065	0.052	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.026	U	0.033	0.026	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.052

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA			
	1000 11011	100		70-130

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98225

Login Report

Customer Name: TOWN OF COUPEVILLE

1500 N. STATE ST. STE. 200

BELLINGHAM

۱Λ/Δ

Order ID:

161114025

Order Date:

11/14/2016

Contact Name: MOLLY HUGHES

Project Name: DW 537 TESTING

Comment: 537 SUBCONTRACTED TO ANATEK-M

Sample #: 161114025-001 Customer Sample #: COCPFC01 Matrix: Drinking Water Collector: STEVE HULSMAN Date Collected: 11/10/2016 Quantity: 2 Date Received: 11/11/2016 11:08:00 AM Time Collected: 10:40 AM Comment: Test Lab Method **Due Date** Priority **UCMR 537** M **EPA 537** 12/2/2016 Normal (~10 Days) Sample #: 161114025-002 Customer Sample #: COCPFC02 Recv'd: Matrix: Drinking Water Collector: STEVE HULSMAN Date Collected: 11/10/2016 Quantity: 2 Date Received: 11/11/2016 11:08:00 AM Time Collected: 11:00 AM Comment: Test Lab Method **Due Date Priority UCMR 537** M **EPA 537** 12/2/2016 Normal (~10 Days) Sample #: 161114025-003 Customer Sample #: COCPFC03 Recv'd: Matrix: Drinking Water Collector: STEVE HULSMAN **Date Collected:** 11/10/2016 Quantity: Date Received: 11/11/2016 11:08:00 AM Time Collected: 10:40 AM Comment: Test Lab Method **Due Date Priority UCMR 537** M **EPA 537** 12/2/2016 Normal (~10 Days)

Customer Name: TOWN OF COUPEVILLE

1500 N. STATE ST. STE. 200

Order ID:

161114025

BELLINGHAM

WA

Order Date: 98225

11/14/2016

Contact Name: MOLLY HUGHES

Project Name: DW 537 TESTING

Comment: 537 SUBCONTRACTED TO ANATEK-M

			4111001100111001110011100111001110011100111001110011100111001110011100110011100011000110001100011000110001100011000110000	
Sample #:	161114025-004 Customer	Sample #: COCPFC04		
Recv'd:	✓ Matrix: Drinking Water	Collector: STEVE HULSMAN	Date Collected: 1	1/10/2016
Quantity:	2 Date Received:	11/11/2016 11:08:00 AM	Time Collected: 1	1:25 AM
Comment:				
Test		Lab Method	Due Date	Priority
UCMR 537		M EPA 537	12/2/2016	Normal (~10 Days)
Sample #:	161114025-005 Customer	Sample #: COCPFC05		
Recv'd:	✓ Matrix: Drinking Water	Collector: STEVE HULSMAN	Date Collected: 1	1/10/2016
Quantity:	2 Date Received:	11/11/2016 11:08:00 AM	Time Collected: 1	1:50 AM
Comment:				
Test		Lab Method	Due Date	Priority
UCMR 537		M EPA 537	12/2/2016	Normal (~10 Days)
Sample #:	161114025-006 Customer	Sample #: COCPFC06/07		
Recv'd:	✓ Matrix: Drinking Water	Collector: STEVE HULSMAN	Date Collected: 1	1/10/2016
Quantity:	4 Date Received:	11/11/2016 11:08:00 AM	Time Collected: 13	2:15 PM
Comment:				
Test		Lab Method	Due Date	Priority
UCMR 537		M EPA 537	12/2/2016	Normal (~10 Days)
Sample #:	161114025-007 Customer	Sample #: COCPFC08		
Recv'd:	✓ Matrix: Drinking Water	Collector: STEVE HULSMAN	Date Collected: 1	1/10/2016
Quantity:	1 Date Received:	11/11/2016 11:08:00 AM	Time Collected: 12	2:16 PM
Comment:				
Test		Lab Method	Due Date	Priority
UCMR 537		M EPA 537	12/2/2016	Normal (~10 Days)

Customer Name: TOWN OF COUPEVILLE

1500 N. STATE ST. STE. 200

WA

BELLINGHAM

Order ID:

161114025

Order Date:

11/14/2016

Contact Name: MOLLY HUGHES

Is there a trip blank to accompany VOC samples?

Labels and chain agree?

98225

Project Name: DW 537 TESTING

N/A Yes

Comment: 537 SUBCONTRACTED TO ANATEK-M

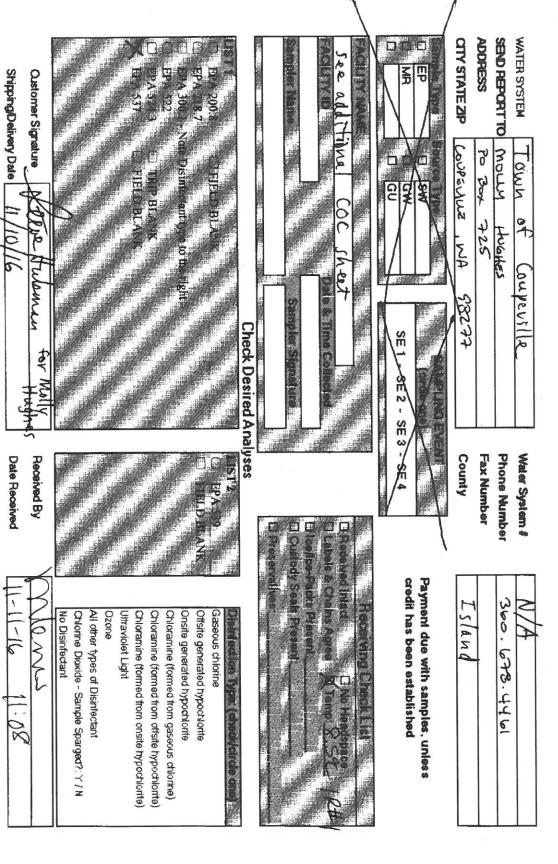
Sample #:	161114025-008	Customer	Sample #:	C	DCPFC09		
Recv'd:	✓ Matrix: Drink	king Water	Collector	r: Sī	TEVE HULSMAN	Date Collected:	11/10/2016
Quantity:	2 Date Red	ceived:	11/11/2016	6 11:0	8:00 AM	Time Collected:	12:30 PM
Comment:							
					2		
Test				Lab	Method	Due Date	Priority
UCMR 537				М	EPA 537	12/2/2016	Normal (~10 Days)
Sample #:	161114025-009	Customer	Sample #:	C	OCPFC10		
Recv'd:	✓ Matrix: Drink	king Water	Collecto	r: S	TEVE HULSMAN	Date Collected:	11/10/2016
Quantity:			11/11/201	6 11:0	8:00 AM	Time Collected:	12:45 PM
Comment:							
Test				Lab	Method	Due Date	Priority
UCMR 537				M	EPA 537	12/2/2016	Normal (~10 Days)
Sample #:	161114025-010 ✓ Matrix: Drink		Sample #		OCPFC00 TEVE HULSMAN	Date Collected:	11/10/2016
					8:00 AM		
Qualitity.	1 Data Ro				0.00 / 1111	Time Collected:	10:00 AM
Comment:	1 Date Re	ceiveu.	11/11/201	0 11.0		Time Collected:	10:00 AM
Comment:	1 Date Re	ceivea.	11/11/201	0 11.0		Time Collected:	10:00 AM
Comment:	1 Date Re	cerveu.	11/11/201	Lab	Method	Time Collected:	Priority
	1 Date Rec	cerveu.			Method EPA 537		
Test	1 Date Rec		Α	Lab M	N-SPECIAL CONTRACT	Due Date 12/2/2016	Priority
Test UCMR 537	1 Date Rec	SA	Α	Lab M	EPA 537	Due Date 12/2/2016	Priority
Test UCMR 537 Samp		SA	Α	Lab M	EPA 537	Due Date 12/2/2016	Priority
Test UCMR 537 Samp	oles received in a co	SA ooler?	MPLE	Lab M CON	EPA 537	Due Date 12/2/2016 CORD	Priority
Test UCMR 537 Samp	oles received in a co	SA ooler? ? of the sam	MPLE	Lab M CON	EPA 537	Due Date 12/2/2016 CORD	Priority
Test UCMR 537 Samp Samp What Samp	oles received in a cooles received intact	SA ooler? ? of the sam a COC?	MPLE	Lab M CON	EPA 537	Due Date 12/2/2016 CORD Yes Yes 8.5	Priority
Test UCMR 537 Samp Samp What Samp Samp	oles received in a cooles received intact is the temperature	ooler? ? of the sam a COC?	AMPLE piple(s)? (°C	Lab M CON	EPA 537	Due Date 12/2/2016 CORD Yes Yes 8.5 Yes	Priority
Samp Samp What Samp Are a	oles received in a cooles received intact is the temperature oles received with a oles received within	ooler? ? of the same a COC? a holding time roperly pres	MPLE uple(s)? (°C) ne? served?	Lab M CON	EPA 537	Due Date 12/2/2016 CORD Yes Yes 8.5 Yes Yes	Priority

ANATEK LABS, INC - Multi-state Certified, NELA 1611114 025 COUP Last

□ 504 E Sprague Ste D. Spokane WA 99202 (509)838-3999 FAX 838-1 [1] 537 TESTING 1282 Alturas Drive, Moscow ID 83843 (208)883-2839 FAX 882-92 1st SAMP 11/10/201 1st RCVD

12/2/2016 11/11/2016







61114 025 COUP Due 12/2/2016

151 SAMP 11/10/201 1st RCVD

11/11/2016

DOH 321-125 (6/90)				SAMPLENUMBER	LABORATORY		LABORATORY	PROJECT OFFICE:	Anate to	O MBER	
				COCPECOO	FIELD	COCC P T T CO 30	FIELD		En	Town of Co	11th
ם				trip blank (1	ADDITIONAL COMMENTS	0 2 0 2 0 0 2 0 0 2 0 0 2 0 0 2 0 0 2 0 0 2 0 0 0 2 0 0 0 0 2 0	- 6	360-678-4461		oupeville	FIELD
DISTRIBUTION: White - I aboratory	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			1/10/16, 10:00)	NAMENTS	11 10 12 45	TIME	ACCOUNT	Possible Toxic/Hazardous	☐ Enforcement/Custody	Division of Drinking FIELD SAMPLE DATA AND CHAIN C
Yellow - Project Officer	METHOD OF SHIPMENT FED EX	DISPATCHED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	RELINCTIONED BY (SIGNATURE): RELINCTIONED BY (SIGNATURE):	CONDITION OF SAMPLES UPON RECEIPT AT LAB: CUSTODY SEALS INTACT: COMMENTS:		MP pH CNDCTVTY DEPTH			Moth 537	Division of Drinking LAW 537 TESTING AND CHAIN
Pink - Field or Office		DATE TIME RECEIVED FOR	RECEIVED BY	11/16/16 1430 RECEIVED BY (**		UNITS TYPE CD CDE PAGE PAGE OA NUM	RECORDER	Jes	~~	

Division of Drinking Water

FIELD SAMPLE DATA AND CHAIN OF CUSTODY REPORT

1st SAMP 11/10/201 1st RCVD 11/11/2016

LW 537 TESTING

SOURCE CODE peville 360-MATRIX CODE -849 CONTAINER CODE RSRVD (Y/N) ADDITIONAL COMMENTS NUMBER OF CONTAINERS 02 1944 YEAR DATE AND TIME ☐ Enforcement/Custody

☐ Data Confidential
☐ Possible Toxic/Hazardous ACCOUNT: SAMPLING DAY 040 0000 0 0 0 0 0 0 TIME 0 45 DEG CONDITION OF SAMPLES UPON RECEIPT AT LAB CUSTODY SEALS INTACT RELINQUISHED BY (SIGNATURE) METHOD OF SHIPMEN DISPATCHED BY (SIGNATURE) RELINQUISHED BY (SIGNATURE) □Yes LIST SPECIAL HANDLING INSTRUCTIONS FOR TOXIC/HAZARDOUS MATERIALS: O No 모 Method 537 None CNDCTVTY umho/cm T CO N C DEPTH 0/16/16 UNITS TYPE CD TO DATE 1436 GHAIN OF GUSTODY RECORD (Requires Signatures).

RECEIVED BY (SIGNATURE): CODE TIME PAGE NUMBER SAMPLING CREW RECEIVED FOR LABBY (SIGNATURE) RECEIVED BY MOBILE LAB FOR FIELD ANALYSIS (SIGNATURE). DATE RECEIVED BY (SIGNATURE) RECORDES Kelly Riepman ĕ 10/6 Jesse SIGNATURE 633 Hulsman アンスマ matrix spike +ranste transfer blank STATION DESCRIPTION そろう DATE DATE SAMPLER'S INITIALS 495 # 195 795 26H 700 TIME TIME TIME

DISTRIBUTION: White - Laboratory

Yellow - Project Officer

Pink - Field or Office

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-001 COCPFC01

Sampling Date Sampling Time

11/10/2016 10:40 AM

Date/Time Received

11/11/2016 11:08 AM

Qualifier

Matrix

Drinking Water

Sample Location

PQL

Extraction Date

11/18/2016

Comments

Parameter	Result
Perfluorobutanesulfonic acid - PFBS	ND
Perfluorooctanesulfonic acid - PFOS	ND
Perfluorooctanoic acid - PFOA	0.0622

ND ND 0.0622

ug/L ug/L ug/L

Units

0.09 11/28/2016 0.01 11/28/2016 0.02 11/28/2016

Analysis Date

TGT TGT TGT

Analyst

EPA 537 EPA 537

EPA 537

Method

Surrogate Data

Sample Number Surrogate S	161114025-001
Surrogate S	tandard
13C-PFDA	
13C-PFHxA	

161114025-002

Sampling Date Sampling Time

Method

EPA 537

EPA 537

Percent Recovery 100.6 95.1

Control Limits 70-130 70-130

Sample Number Client Sample ID Matrix

COCPFC02 **Drinking Water** Sample Location

Units

11/10/2016 11:00 AM

Date/Time Received **Extraction Date**

Analyst

11/11/2016 11:08 AM

11/18/2016

Method

Comments

Parameter
Perfluorobutanesulfonic acid - PFBS
Perfluorooctanesulfonic acid - PFOS
Perfluorooctanoic acid - PEOA

Result ND ND 0.0558

0.09 ug/L ug/L 0.01 ug/L 0.02

PQL

11/28/2016 11/28/2016 11/28/2016

Analysis Date

TGT **EPA 537 TGT EPA 537 TGT EPA 537** Qualifier

Surrogate Data

Sample Number

161114025-002

Surrogate Standard 13C-PFDA 13C-PFHxA

Method **EPA 537 EPA 537** Percent Recovery 94.9 98.0

Control Limits 70-130 70-130

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-003

Sampling Date

11/10/2016 10:40 AM

Date/Time Received

11/11/2016 11:08 AM

Matrix

COCPFC03 **Drinking Water** Sampling Time Sample Location **Extraction Date**

11/18/2016

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample	Number	
	Surrogate	Si

tandard 13C-PFDA

13C-PFHxA 161114025-004 Method **EPA 537 EPA 537**

87.5 88.4

Control Limits 70-130 70-130

Sample Number Client Sample ID

COCPFC04 **Drinking Water**

161114025-003

Sampling Date Sampling Time Sample Location 11/10/2016 11:25 AM

Date/Time Received **Extraction Date**

Percent Recovery

11/11/2016 11:08 AM

Comments

Matrix

Parameter	
Perfluorobutanesulfonic acid - PFBS	
Perfluorooctanesulfonic acid - PFOS	

Perfluorooctanoic acid - PFOA

Result Units ND ug/L ND ug/L ND ug/L

PQL **Analysis Date** 0.09 11/28/2016 0.01 11/28/2016 0.02

Analyst **EPA 537 TGT**

TGT

TGT

Method Qualifier

EPA 537

EPA 537

11/18/2016

Surrogate Data

Sample Number

161114025-004

Surrogate Standard 13C-PFDA 13C-PFHxA

Method **EPA 537 EPA 537**

11/28/2016

Percent Recovery 91.6 91.0

Control Limits 70-130 70-130

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-005

COCPFC05 Drinking Water Sampling Date
Sampling Time
Sample Location

11/10/2016

Date/Time Received

11/11/2016 11:08 AM

Qualifier

11:50 AM

Extraction Date

11/18/2016

Matrix Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537

Surrogate Data

Number

161114025-005

Surrogate Standard 13C-PFDA 13C-PFHxA Method EPA 537 EPA 537 Percent Recovery 83.9

88.6

70-130 70-130

Sample Number Client Sample ID 161114025-006 COCPFC06/07

COCPFC06/07 Drinking Water Sampling Date Sampling Time 11/10/2016

Analysis Date

11/28/2016

11/28/2016

11/28/2016

Date/Time Received

Analyst

TGT

TGT

TGT

11/11/2016 11:08 AM

Time 12:15 PM

Sample Location

Extraction Date 11/18/2016

11/11/2016 11:08 AM

Comments

Matrix

Parameter

Perfluorobutanesulfonic acid - PFBS

Perfluorooctanesulfonic acid - PFOS

Perfluorooctanoic acid - PFOA

ND ND 0.0270

Result

 Units
 PQL

 ug/L
 0.09

 ug/L
 0.01

Extraction Date

Qualifier

Method

EPA 537

EPA 537

EPA 537

Surrogate Data

0.02

Sample Number

161114025-006

Surrogate Standard 13C-PFDA 13C-PFHxA Method EPA 537 EPA 537

ug/L

Percent Recovery 84.4 82.1

70-130 70-130

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-007 COCPEC08 Drinking Water

Sampling Date Sampling Time

11/10/2016 12:16 PM

Date/Time Received

11/11/2016 11:08 AM

Sample Location

Extraction Date 11/18/2016

Matrix Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT ·	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample	Number

161114025-007

Surrogate Standard 13C-PFDA 13C-PFHxA

Method **EPA 537** EPA 537 Percent Recovery 93.8 89 4

Control Limits 70-130 70-130

Sample Number Client Sample ID

D-----

161114025-008 COCPFC09

Drinking Water

Sampling Date Sampling Time

11/10/2016

Date/Time Received

Analyst

TGT

TGT

TGT

11/11/2016 11:08 AM

Sample Location

Matrix Comments

Parameter
Perfluorobutanesulfonic acid - PFBS
Perfluorooctanesulfonic acid - PFOS
Perfluorooctanoic acid - PEOA

ND ND 0.0246

Result

Units PQL ug/L 0.09 ug/L 0.01

ug/L

12:30 PM

Analysis Date

11/28/2016

11/28/2016

11/28/2016

Extraction Date

11/18/2016

Qualifier

Method

EPA 537

EPA 537

EPA 537

Surrogate Data

0.02

Sample Number

161114025-008

Surrogate Standard 13C-PFDA 13C-PFHxA

Method **EPA 537 EPA 537** Percent Recovery 85.5 88.9

Control Limits 70-130 70-130

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Sample Number Client Sample ID 161114025-009 COCPFC10

Sampling Date Sampling Time 11/10/2016 12:45 PM

Date/Time Received

Extraction Date

11/11/2016 11:08 AM 11/18/2016

Sample Location

Drinking Water

Comments

Matrix

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-009
Surrogat	e Standard
100 555	

13C-PFDA 13C-PFHxA Method EPA 537 EPA 537

90.8

11/11/2016 11:08 AM

Qualifier

Sample Number Client Sample ID Matrix

COCPFC00 **Drinking Water**

161114025-010

Sampling Date Sampling Time Sample Location 11/10/2016 10:00 AM

Date/Time Received Extraction Date

Percent Recovery

91.4

11/18/2016

Control Limits

70-130

70-130

Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/28/2016	TGT	EPA 537	
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.01	11/28/2016	TGT	EPA 537	
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/28/2016	TGT	EPA 537	

Surrogate Data

Sample Number	161114025-010			
Surrogate	Standard	Method	Percent Recovery	Control Limits
13C-PFDA		EPA 537	82.8	70-130
13C-PFHxA	1	EPA 537	80.0	70-130

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Client:

TOWN OF COUPEVILLE

Address:

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report

Authorized Signature

Kathleen a Sattle

Kathy Sattler, Lab Manager

MCL

EPA's Maximum Contaminant Level

ND

Not Detected

PQL

Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory. The results reported relate only to the samples indicated. Soil/solid results are reported on a dry-weight basis unless otherwise noted.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com 504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: Address: TOWN OF COUPEVILLE

1500 N. STATE ST. STE. 200

BELLINGHAM, WA 98225

Attn:

MOLLY HUGHES

Batch #:

161114025

Project Name:

DW 537 TESTING

Analytical Results Report Quality Control Data

Lab Control Sample							
Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Perfluorooctanoic acid - PFOA	0.0166	ug/L	0.02	83.0	50-150	11/18/2016	11/28/2016
Perfluorooctanesulfonic acid - PFOS	0.0397	ug/L	0.04	99.3	50-150	11/18/2016	11/28/2016
Perfluorobutanesulfonic acid - PFBS	0.060	ug/L	0.09	66.7	50-150	11/18/2016	11/28/2016

Matrix Spike									
Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161115016-004	Perfluorooctanoic acid - PFOA	ND	0.0833	ug/L	0.08	104.1	70-130	11/18/2016	11/28/2016
161115016-004	Perfluorooctanesulfonic acid - PFOS	ND	0.148	ug/L	0.16	92.5	70-130	11/18/2016	11/28/2016
161115016-004	Perfluorobutanesulfonic acid - PFBS	ND	0.299	ug/L	0.36	83.1	70-130	11/18/2016	11/28/2016

Matrix Spike Duplicate						1.7		
Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Perfluorooctanoic acid - PFOA	0.103	ug/L	0.08	128.8	21.1	0-25	11/18/2016	11/28/2016
Perfluorooctanesulfonic acid - PFOS	0.162	ug/L	0.16	101.3	9.0	0-25	11/18/2016	11/28/2016
Perfluorobutanesulfonic acid - PFBS	0.368	ug/L	0.36	102.2	20.7	0-25	11/18/2016	11/28/2016

Method Blank					
Parameter	Result	Units	PQL	Prep Date	Analysis Date
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	11/18/2016	11/28/2016
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.04	11/18/2016	11/28/2016
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	11/18/2016	11/28/2016

AR

Acceptable Range

ND

Not Detected

PQL

Practical Quantitation Limit

RPD

Relative Percentage Difference

Comments: 537 SUBCONTRACTED TO ANATEK-M

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com 504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Login Report

Customer Name: TOWN OF COUPEVILLE

Order ID:

Order Date:

170329059

P.O. BOX 725

98239

3/29/2017

COUPEVILLE

WA

Contact Name: JOSEPH GROGAN

Project Name: 537

Comment:

Sample #: 170329059-001 Customer Sample #: Recv'd: Matrix: Drinking Water Collector: JOSEPH GROGAN Quantity: Date Received: 3/29/2017 1:55:00 PM

Date Collected: 3/28/2017

Time Collected:

2:00 PM

Priority

Comment:

Test

UCMR 537 M **EPA 537** Sample #: 170329059-002

Normal (~10 Days)

Recv'd:

Customer Sample #:

Matrix: Drinking Water Collector: JOSEPH GROGAN

1-08

Date Collected: 3/28/2017

Due Date

4/17/2017

Quantity: 1

Date Received:

3/29/2017 1:55:00 PM

Lab

Lab

Time Collected:

1:40 PM

Comment:

Test

UCMR 537 M Method **EPA 537**

Method

Due Date 4/17/2017 **Priority**

Normal (~10 Days)

170329059-003 Sample #: Customer Sample #:

Recv'd:

Matrix: Drinking Water Collector: JOSEPH GROGAN

Date Collected:

3/28/2017

Quantity: 1

Date Received:

3/29/2017 1:55:00 PM

Time Collected:

1:40 PM

Comment:

Test **UCMR 537**

Lab Method M

Due Date

Priority

EPA 537

4/17/2017

Normal (~10 Days)

Customer Name: TOWN OF COUPEVILLE

Order ID: 170329059

P.O. BOX 725

WA

Order Date:

3/29/2017

COUPEVILLE

98239

Contact Name: JOSEPH GROGAN

Project Name: 537

Comment:

SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature of the sample(s)? (°C)	10.1/10.3
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

70329 059 COUP Last 4/17/2017 3/29/2017

ANATEK LABS, INC - Multi-state Certified, NEL37

3/28/2017 1st RCVD

☐ 1282 Alturas Drive, Moscow ID 83843 (208)883-2839 FAX 882-{ ☐ 504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX 838

Washington Chain of Custody - Drinking Water Analysis

WATER SYSTEM TOWN OF CA	COURTIELE	Water System #	155509
TO JOSEPH GIR	XX	Phone Number	(360)914-0314
70 Zox 7		Fax Number	
ITY STATE ZIP COUPEULLE USA	4 98239	County	ISLAND
ample Type Sample Purpose	Date & Time Collected	3/28/17 14100	Payment due with
☐ Before (B) ☐ Compliance (C)		Jacoby Grocar	
☐ After (A) ☐ Investigative (I)	Sampler Name:	Samples/Submitted to	credit has been
☐ Unknown (U) ☐ Other Purpose (B)	Sampler Signature:	1119	established.
OOH Source # (Check one and fill in whe	here necessary)		Receiving Check List
Single Well Source Number:		X Receive	Q Received Intact
R	157	√ Labels of	& Chains Agree $1000000000000000000000000000000000000$
☐ Standing Distribution (93) (Lead/Copper Distribution)	per Distribution)	-eo/loe/loe-	X Ice/Ice-Packs Present
Composite Sampling (95) List source #'s	\$,#	□ Custod)	
☐ Blended Sample (96) List source #'s	S,#	Ø Preserv	A Preservatives. 1212 12165-16
	Check Desired Analyses	nalyses	
SOC	VOCs & DBPs	socs	Other (specify):
□ Lead / Copper	U VOC (VOC1)	☐ Phase II SOC ☐ Semivolatiles (PEST1)	EPA 537
J Lead / Arsenic	□ HAA5	☐ Herbicides (HERB1)	
	1 Toc	Carbamates (INSECT1	_
□ Nitrate	RADS	☐ Pesticides (PEST1)	
□ Nitrite	Gross Alpha	□ Phase V SOC	cooler 1 cc 1 UPS
Washington Complete IOC	☐ Gross Beta	☐ Diquat	
	□ RAD 228	☐ Glyphosate	
T Asbestos		□ Dioxin	
Customer Signature	J	Received By	Today Saille.
Shipping/Delivery Date	3/28/19	Date Received	3-20-17 1355

ANATEK LABS, INC - Multi-state Certified, Night SAMP 3/28/2017 1st RCVD ☐ 1282 Alturas Drive, Moscow ID 83843 (208)883-2839 FAX 88 ☐ 504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX !

Washington Chain of Custody - Drinking Water Analysis

Water System # 155509 Phone Number (360) 914 - 0314 Fax Number Estand	Samples submitted to established.	Received Intact Labels & Chains Agree D. Temp. 10.1 [0.2] [1.2] D. Custody Seals Present C. Cust	Received By Date Received
WATER SYSTEM SEND REPORT TO SEND REPORT TO ADDRESS CITY STATE ZIP COUPEUUK 128 COUPEUUK 128	Sample Type Sample Purpose □ Before (B) □ Compliance (C) □ After (A) □ Investigative (I) □ Unknown (U) □ Other Purpose (B)	DOH Source # (Check one and fill in where necessary) Single Well Source Number: /- OS Flowing Distribution (92) Composite Sampling (95) List source #'s Composite Sampling (95) List source #'s Blended Sample (96) List source #'s Check Desired Analyses IOCs Check Desired Analyses NOCs & DBPs SOC Check Desired Analyses IOCs Check Desired Analyses Check Desired Analyses IOCs Check Desired Analyses	Shipping/Delivery Date

ANATEK LABS, INC - Multi-state Certified, NE stand 3/28/2017 1st RCVD 3/29/2017 1504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX 83

Washington Chain of Custody - Drinking Water Analysis

SEND REPORT TO LOW OF COUNTY LILE SEND REPORT TO LOW TRS ADDRESS ADDRESS	Water System # Phone Number Fax Number	155509
CITY STATE ZIP COUPLUIST UNA 98239	County	I SLAWD
Sample Type Sample Purpose □ Before (B) □ Compliance (C) □ After (A) **pf Investigative (I) □ Unknown (U) □ Other Purpose (B)	Statut Creasus. Samples Submitted to	Payment due with samples unless credit has been established.
DOH Source # (Check one and fill in where necessary)		Receiving Check List
Single Well Source Number: 27 Flowing Distribution (92)	X Received	X Received Intact □ No Headspace X Labels & Chains Agree NT Femp. 10.1 10.3 10.44
Standing Distribution (93) (Lead/Copper Distribution)	∭ loe/loe-Pa	
□ Blended Sample (96) List source #'s	☐ Custody S	\square Custody Seals Present.
Check Desired Analyses		1 1
O _A	SOCs	Other (specify):
	☐ Phase II SOC: ☐ Semivolatiles (PEST1)	
L Lead / Arsenic	☐ Herbicides (HERB1)	" OEMR
□ Nitrate RADs	☐ Pesticides (PEST1) ☐ EDB	
	☐ Phase V SOC ☐ Diquat	tector (iee/uss
☐ Washington Complete IOC ☐ RAD 226 ☐ RAD 228 ☐ Asbestos	☐ Endothall ☐ Glyphosate ☐ Dioxin	
Customer Signature	Received By	Sales Lotter
Shipping/Delivery Date	Date Received	13-2011 1256

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/0391 January 27, 2017

The Honorable Molly Hughes Mayor of Coupeville PO Box 725 Coupeville, WA 98239

Dear Mayor Hughes:

Subj: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

The initial results from the drinking water sampling from your community wells for per- and polyfluoroalkyl substances (PFAS) indicate that perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA) are below the Environmental Protection Agency's (EPA's) Lifetime Health Advisory (LHA). These results indicate that no further action is required for these community wells at this time. Enclosure 1 shows the phase 1 sampling area for Naval Air Station Whidbey Island (NAS WI) Outlying Landing Field (OLF).

The specific test results of the drinking water sampling performed at your community well are provided in Enclosures 3, 4 and 5. Please note that these are initial results, which still need to be validated. Data validation is performed by a third party data validation firm in order to determine if the data is usable as reported. This process includes data evaluation in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity. This process can take several weeks. We will provide you a copy of the validated results once received and update you on any changes necessary; however, we don't anticipate the results to change significantly.

The health and safety of our neighbors are my top priority, which is why the Navy developed a protective policy to address past releases of Aqueous Film Forming Foam (also known as firefighting foam) (AFFF) containing PFAS. PFAS are unregulated or "emerging" contaminants, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements.

In May 2016, the EPA developed a LHA for two PFAS compounds, specifically PFOS and PFOA. According to the EPA, health advisory levels are not regulatory standards. They are health-based concentrations which should offer a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOS and PFOA in drinking water. The EPA heath advisory level for lifetime exposure is 70 parts per trillion (ppt) for PFOS and 70 ppt for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should not exceed 70 ppt.

5726 Ser N46/0391 January 27, 2017

The Navy will continue working closely with Region 10 U.S. EPA, Agency for Toxic Substances and Disease Registry, State of Washington Department of Health, and Island County Public Health to address this important issue. I am committed to the health and safety of all neighbors in our community and will keep you updated if information or regulatory status of hese compounds change.

Below are links to sites that will provide additional detail and background information:

EPA Fact Sheet about the PFOS and PFOA health advisory levels: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos, and Naval Facilities Engineering Command Northwest update: http://go.usa.gov/xkMBc

We will host another public meeting in early 2017 to share a summary of the drinking water investigation results and any plans for additional sampling. No specific results will be shared with the general public. You will receive an email or phone call of this meeting a minimum of one week before it is held.

Thank you for your cooperation as we work to ensure that human health and the environment are protected. I understand that you may have additional questions regarding the Navy's actions and what this means to you. Please contact the Navy's Public Affairs Officer Leslie Yuenger at (360) 396-6387 or by email at PAO feedback@navy.mil.

Sincerely

G.\C. MOORE

Captain, U.S. Navy Commanding Officer

Enclosures: 1. NASWI OLF Coupeville Water Investigation Fact Sheet

- 2. Summary of results
- 3. Laboratory results
- 4. Explanation of laboratory abbreviations



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVE OAK HARBOR, WASHINGTON 98278-5000 3A, 1-87 + 3-87

5726 Ser N46/0983 April 10, 2017

Town of Coupeville and Fort Casey Treatment Plant PO Box 725 Coupeville, WA 98239

Dear Water Purveyor:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULTFIELD DRINKING WATER TESTING RESULTS

I am writing you regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville to inform you that we received the preliminary sampling results for your community well. The preliminary sampling results indicate that the drinking water is <u>below</u> the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that <u>no further action is required for the community well at this time</u>. We are providing residents serviced by this community well that are within the Navy's phase 2 sampling area a copy of this letter with the preliminary drinking water results. Please contact your customers that live outside of this sampling area (if any) to alleviate any concern those residents may have regarding their drinking water. Please find the preliminary test results of the community well attached here in Enclosures 1 and 2.

As an extra precaution, the preliminary results are going through a subsequent validation process to confirm their accuracy. Because validation of results can take several weeks to complete, we wanted to share the initial testing results immediately to keep you informed of the process every step of the way. We will follow up with the validated results as soon as that process is complete.

Following the distribution of preliminary Phase 1 result letters, it was brought to our attention that we were not clear in explaining the difference between the various data reporting levels and laboratory abbreviations in the preliminary data report. This created unnecessary confusion and we sincerely apologize. The Navy is evaluating ways to report the data in the future that would be less confusing to residents. In the interim, please find the factsheet enclosed that will assist you in understanding your data package as it is reported at this time (see Enclosure 3).

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may

5726 Ser N46/0983 April 10, 2017

change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors. We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to Navy Public Affairs Officer, Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely,

G.C. MOORE Captain, U.S. Navy Commanding Officer

Enclosures: 1. Summary of Preliminary Data Results

2. Preliminary Data Report

3. Understanding Data Packages



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/0831 March 27, 2017

Town of Coupeville and Fort Casey Treatment Plant PO Box 725 Coupeville, WA 98239 RECEIVED

APR 17 2017

Dear Water Purveyor:

TOWN OF COUPEVILLE

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

I am writing you regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville to inform you that we received the preliminary sampling results for your community well. The preliminary sampling results indicate that the drinking water is <u>below</u> the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that <u>no further action is required for the community well at this time</u>. We are providing residents serviced by this community well that are within the Navy's phase 1 sampling area a copy of this letter with the preliminary drinking water results. Please contact your customers that live outside of this sampling area to alleviate any concern those residents may have regarding their drinking water. Please find the preliminary test results of the community well attached here in Enclosures 1 and 2.

As an extra precaution, the preliminary results are going through a subsequent validation process to confirm their accuracy. Because validation of results can take several weeks to complete, we wanted to share the initial testing results immediately to keep you informed of the process every step of the way. We will follow up with the validated results as soon as that process is complete.

Following the distribution of preliminary result letters to other residents, it was brought to our attention that we were not clear in explaining the difference between the various data reporting levels and laboratory abbreviations in the preliminary data report. This created unnecessary confusion and we sincerely apologize. The Navy is evaluating ways to report the data in the future that would be less confusing to residents. In the interim, please find the factsheet enclosed that will assist you in understanding your data package as it is reported at this time (see Enclosure 3).

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may

5726 Ser N46/0831 March 27, 2017

change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors. We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to Navy Public Affairs Officer, Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely,

G. C. MOORE Captain, U.S. Navy Commanding Officer

Enclosures: 1. Summary of Preliminary Data Results

2. Preliminary Data Report

3. Understanding Data Packages



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/2520 June 12, 2017

Town of Coupeville and Fort Casey Treatment Plant PO Box 725 Coupeville, WA 98239

Dear Water Purveyor:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER VALIDATED TESTING RESULTS

I am writing regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville. The process of validating your preliminary sampling results is complete. The validated sampling results indicate that the drinking water remains below the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required for the community well at this time. We are providing residents serviced by this community well that are within the Navy's phase 1 sampling area a copy of this letter with the validated drinking water results. Please contact your customers that live outside of this sampling area to alleviate any concern those residents may have regarding their drinking water. Please find the validated test results of the community well attached here in Enclosures 1 and 2.

Following the distribution of preliminary result letters to residents, it was brought to our attention that we were not clear in explaining the difference between the various data reporting levels and laboratory abbreviations in the preliminary data report. This created unnecessary confusion and we sincerely apologize. The Navy is evaluating ways to report the data in the future that would be less confusing to residents, such as stating 'ND' (non-detect) when a result was not detected by the laboratory instrument. In the interim, please find the factsheet enclosed that will assist you in understanding your data package as it is reported at this time (see Enclosure 3).

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

5726 Ser N46/2520 June 12, 2017

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors. We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to Navy Public Affairs Officer, Leslie Yuenger, at (360) 396-6387 or by email at PAO feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely

- Enclosures: 1. Summary of Validated Data Results
 - 2. Validated Data Report
 - 3. Understanding your Data Package Factsheet



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/1406 April 24, 2017

The Honorable Molly Hughes Mayor of Coupeville PO Box 725 Coupeville, WA 98239

Dear Mayor Hughes:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER VALIDATED TESTING RESULTS

I am writing regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville. The process of validating your preliminary sampling results is complete. The validated sampling results indicate that the drinking water remains <u>below</u> the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that <u>no further action is required for the community well at this time</u>. We are providing residents serviced by this community well that are within the Navy's phase 1 sampling area a copy of this letter with the validated drinking water results. Please contact your customers that live outside of this sampling area to alleviate any concern those residents may have regarding their drinking water. Please find the validated test results of the community well attached here in Enclosures 1 and 2.

Following the distribution of preliminary result letters to residents, it was brought to our attention that we were not clear in explaining the difference between the various data reporting levels and laboratory abbreviations in the preliminary data report. This created unnecessary confusion and we sincerely apologize. The Navy is evaluating ways to report the data in the future that would be less confusing to residents, such as stating 'ND' (non-detect) when a result was not detected by the laboratory instrument. In the interim, please find the factsheet enclosed that will assist you in understanding your data package as it is reported at this time (see Enclosure 3).

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may change or additional standards may be developed by other federal, state, or local agencies. These

5726 Ser N46/1406 April 24, 2017

changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors. We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to Navy Public Affairs Officer, Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely

G. C MOORE Captein, U.S. Navy Commanding Officer

Enclosures: 1. Summary of Validated Data Results

2. Validated Data Report

3. Understanding your Data Package Factsheet



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/2345 November 7, 2016

Town of Coupeville and Fort Casey Treatment Plant Parcel No R13114 250 4610 PO Box 725 Coupeville WA 98239

Dear Property Owner:

The U.S. Navy is conducting a drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville in November and December of 2016 as a cautionary measure to ensure people living near our installations are not being exposed to certain chemicals in drinking water. The chemicals the Navy is testing for are per- and polyfluoroalkyl substances, commonly known as PFAS, which could be present in drinking water around both locations due to past uses of the fire-fighting agent called Aqueous Film Forming Foam (AFFF).

We tested and discovered PFAS in one drinking water well on OLF Coupeville which may be a result of former firefighting, lifesaving and emergency-response operations using AFFF. Based on your property's proximity to OLF Coupeville there is a potential for PFAS to be present in the drinking water. We would like to sample all private drinking water wells in the sample area. We will also be coordinating with community water purveyors to sample water supply wells and the associated distribution system.

PFAS are chemicals used in numerous commercial and industrial products that are of increasing national concern by the Environmental Protection Agency (EPA), Department of Defense, the Navy, and other federal and state agencies. In May 2016, the EPA released lifetime health advisory levels for two PFAS, specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The EPA established these levels to provide Americans with a margin of protection from a lifetime of exposure to PFOS and/or PFOA in drinking water.

We know this evolving issue may raise concerns and questions. We invite you to attend an Open House Public Meeting to learn more about the drinking water investigation at both Ault Field and OLF Coupeville. Property owners within the sampling area will be able to schedule a time to have their private drinking well sampled. Subject matter experts from the Navy and partnering agencies will be available to share information and answer your questions. Because there will not be a formal presentation, you are welcome to arrive at any time during the Open House. Listed below is the information on the Open House meetings:

Oak Harbor Monday, November 21, 2016, 5:00 – 9:00 pm Oak Harbor Elementary School - 151 SE Midway Blvd

5726 Ser N46/2345 November 7, 2016

Coupeville Tuesday, November 22, 2016, 11:00 am - 2:00 pm & 5:00 - 9:00 pm Camp Casey Conference Center - 1276 Engle Road

The Navy recently established a policy to ensure our neighbors are not exposed to drinking water impacted from a known or likely Navy PFAS release. These protective, voluntary actions are being taken to ensure our neighbors are not exposed to these chemicals in drinking water above the EPA health advisory levels. If your drinking water is found to contain PFOS and/or PFOA above the EPA health advisory level, the Navy will provide bottled water or an alternate water supply after receiving the preliminary analytical results. We will continue to provide alternate water until a long-term solution is in place.

The Navy is working in partnership with Region 10 U.S. EPA, Agency for Toxic Substances and Disease Registry, State of Washington Department of Health, and Island County Department of Public Health to ensure you and your family are not consuming drinking water impacted by the Navy with PFOS/PFOA above the EPA health advisory.

This letter is accompanied by three enclosures, one of which explains how your property was identified to be part of this investigation and information on how to schedule sampling. You can also find information on the web at: http://go.usa.gov/xkMBc. You may schedule drinking water sampling for your residence at either Open House, on November 21 or November 22, by leaving a voicemail at 360-396-1030, or by emailing the Navy's Public Affairs Office at PAO Feedback@navy.mil.

We are committed to keeping you informed and we look forward to meeting you at an Open House.

Captain, U.S. Navy Commanding Officer

- Enclosures: 1. NASWI Outlying Landing Field Coupeville Drinking Water Investigation Fact Sheet
 - 2. PFAS Drinking Water Sampling Information
 - 3. EPA PFOA/PFAS Health Advisory Fact Sheet



Naval Air Station Whidbey Island OLF Coupeville

Drinking Water Investigation

November 7, 2016

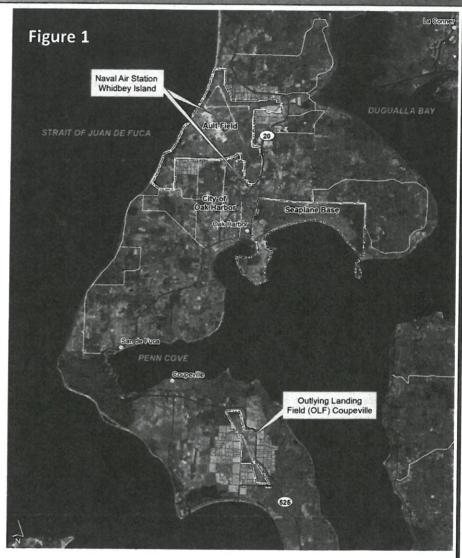
INTRODUCTION

The Navy has developed a protective policy to address past releases of perpoly-fluoroalkyl substances, commonly known as PFAS, under the Environmental Navy Restoration Program. These substances may be present in the soil and/or groundwater at Navy sites as a result of historical fire fighting activities using aqueous film forming foam (AFFF), including response to plane crashes, equipment testing, and/or training, as well as other operations such as plating shops and hangars where AFFF was used in the fire suppression system. Based on historical use of AFFF, there are two areas of PFAS investigation at Naval Air Station Whidbey Island (NASWI): Ault Field and Outlying Landing Field (OLF) Coupeville (see Figure 1).

The Navy recognizes the potential for people to be exposed to drinking water impacted by our use of AFFF. Therefore, our first priority is to sample drinking water sources that are close to confirmed or potential AFFF releases. NASWI was identified for sampling under this Navy policy because PFAS have been found in the groundwater at

Ault Field and drinking water at OLF Coupeville. The Navy is working in conjunction with Region 10 Environmental Protection Agency (EPA), Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to conduct drinking water investigations at Ault Field and OLF Coupeville. The Navy will continue to work with agencies until long-term solutions are implemented.

If your drinking water is found to contain PFAS above the EPA health advisory level, the Navy will provide alternate drinking water (for example, bottled water) until a long-term solution is implemented.



The Navy is conducting this voluntary measure to ensure we protect drinking water quality both on- and off-base. There is no legal requirement to conduct the planned drinking water testing.

This fact sheet focuses on the OLF Coupeville Drinking Water Investigation. The Navy is requesting access to sample all private drinking water wells within the phase 1 sample area near OLF Coupeville (Figure 2) and will be coordinating with the community water purveyors to sample the water supply wells in this area for those residents receiving their drinking water from a community system. A separate fact sheet is available with information on the NASWI Ault Field investigation.

OLF Coupeville Drinking Water Investigation

BACKGROUND

PFAS are man-made chemicals that have been used since the 1950s in many household and industrial products because of their stain- and water-repellant properties (for example, fabric in upholstered furniture, carpet, nonstick cookware, floor wax, and the lining of microwave popcorn bags). PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released to the environment, they remain there for a long time.

PFAS are "emerging" contaminants, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements. The EPA is currently studying PFAS to determine if regulation is needed.

In May 2016, the EPA announced lifetime health advisory levels for two PFAS, specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). According to the EPA: Health advisory levels are not regulatory standards. They are health-based concentrations which should offer a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOS and PFOA in drinking water. The EPA health advisory level for lifetime exposure is 70 parts per trillion (ppt) for PFOS and 70 ppt for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should not exceed 70 ppt.

The drinking water investigation for OLF Coupeville will focus on PFOS and PFOA because these are the only PFAS for which the EPA has established a health advisory level in drinking water.

INVESTIGATION

There is no historical documentation that AFFF was used at OLF Coupeville; however, PFOA was detected in one of the on-base drinking water well locations sampled in September 2016. This detection was below the EPA's lifetime health advisory; however, it indicates a potential previous release of AFFF near building 2807 (see Figure 2).

There is significant uncertainty regarding groundwater flow direction at the site because the Navy has not conducted previous groundwater investigations at OLF Coupeville. The only information regarding PFOS/PFOA in groundwater at OLF Coupeville is from two drinking water samples collected from building 2807 and building 11. Since the only detection was from the well at building 2807, the Navy plans to use that building as the center point to draw a 1-mile radius to initiate off-base drinking water sampling following Navy policy. This designated sampling area (Figure 2) includes more than 350 properties. Drinking water in this area is supplied by private drinking water wells and community well fields, which provide drinking water to multiple properties.





With permission, the Navy would like to sample all drinking water wells in the designated sampling area. The Navy is seeking the public's assistance to identify all drinking water wells within the sampling area.

If your property is within the designated sampling area and you have a drinking water well on your property, you may schedule sampling of your well at the Open House or by leaving a voicemail at 360-396-1030 or emailing the Navy's Public Affairs Office at PAO_Feedback@navy.mil.

The Navy also plans to install and sample 16–20 on-base groundwater monitoring wells at OLF Coupeville (exact locations still under development). Groundwater monitoring is needed to give the Navy sufficient data to determine where PFOS/PFOA is present in the groundwater at OLF Coupeville and to determine the groundwater flow direction.

Representatives from the Navy, EPA, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health will be available at the Open House Public Meetings to discuss this important project.

Please attend at any time during one of the following meetings to have your questions answered.

Oak Harbor

Monday, November 21, 2016, 5–9 p.m. Oak Harbor Elementary School, 151 SE Midway Blvd

Coupeville

Tuesday, November 22, 2016, 11 a.m.-2 p.m. and 5-9 p.m. Camp Casey Conference Center, 1276 Engle Road

FOR MORE INFORMATION

www.secnav.navy.mil/eie/pages/pfc-pfas.aspx

The Navy has established the following website to keep you updated as more information becomes available: http://go.usa.gov/xkMBc

You may schedule drinking water sampling for your residence by leaving a voicemail at **360-396-1030** or by sending an email to **PAO_feedback@navy.mil**.

Legend

X

OLF Coupeville Supply Well

Assumed Regional Groundwater Flow Direction

Phase 1 Sample Areas

OLF Coupeville 1-mile zone

Base Boundary

ACTIONS BASED ON RESULTS

Results from drinking water sampling are expected in early 2017. The Navy will provide notification to each property owner of their personal drinking water results and follow-up actions if needed. We will keep the results confidential to the greatest extent possible.

The EPA recommends that water containing PFOS and/ or PFOA above the health advisory levels not be used for drinking or cooking. If your drinking water is found to contain PFOS and/or PFOA above the EPA health advisory level, the Navy will provide bottled water or an alternate water supply after receiving the preliminary analytical results. The Navy will continue to provide the alternate water source until a long-term solution is implemented.

The phase 1 sampling area, as shown on Figure 2, may be expanded in one or more directions in the future depending on the results.

HEALTH INFORMATION

Exposure to PFOS and PFOA appears to be global. Studies have found both compounds in the blood samples of the general population. Studies on exposed populations indicate that PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight. When laboratory studies give rats or mice large doses, they exhibit developmental, reproductive, and liver effects. Other studies suggest a link with certain cancers.

Health effects from exposure to low levels of PFAS are not well known and studies are continuing. At this time, it is not possible to link exposures to PFOS and/or PFOA to a person's individual health issues. Blood tests are available to measure these chemicals, but they are not routinely done because the results can be inconclusive and test results do not predict health effects. Long-term exposure effects are still being investigated by the EPA.

Consuming water above the EPA lifetime health advisory level may be a health concern.

PFOS/PFOA Drinking Water Sampling Frequently Asked Questions

How do I schedule the sampling? Property owners within the designated sampling area can call **360-396-1030** to schedule a sampling appointment. Sampling appointments can also be scheduled in person at the Open House Public Meetings. The meetings will be held on:

- Monday, November 21, 2016, Oak Harbor Elementary, 151 SE Midway Blvd, from 5 to 9 pm
- Tuesday, November 22, 2016 at Camp Casey, 1276 Engle Road, Coupeville, from 11 am to 2 pm, and from 5 to 9 pm

How do I return the Homeowner Questionnaire? The questionnaire can be returned to the Navy at any of the Open House Public Meetings, mailed to Public Affairs, Naval Facilities Engineering Command Northwest, 1101 Tautog Circle, Room 203, Silverdale WA, 98315, or emailed to the Navy's Public Affairs Office at PAO Feedback@navy.mil.

What are the dates and times for sampling? The sampling will be conducted from November 28, 2016 – December 21, 2016. Sampling appointments will be available between the hours of 9 am to 7 pm, Monday – Friday, and 9 am to 1 pm on Saturday. There will be no sampling appointments on December 4, 11, or 18, 2016. Accommodations can be made for property owners who may not be available during the regularly scheduled sampling times.

Who will be taking the sample? A team of two Navy-contracted professional environmental samplers will collect the sample. An adult resident (18 years of age or older) must be present during the sampling.

How long will the sampling take? The sampling will take approximately 30 minutes. The Navy representatives will take a sample from the closest spigot to your well, preferably from a spigot that does not receive any in-home treatment. If there is no outside access, the sample will be collected from a faucet in your home. The team will measure and record basic information about the water (e.g., pH and temperature), and will review the homeowner questionnaire.

When will I receive the results? The results are expected early-January 2017, depending on when the sample was obtained. The Navy will provide private notification of your results. If your drinking water is found to contain PFOS and/or PFOA above the EPA health advisory levels, the Navy will contact you in person to arrange for alternate water (e.g., bottled water) for drinking and cooking in your home until a long-term solution can be implemented. If your drinking water is found to contain PFOS and /or PFOA below the EPA health advisory levels, you will be contacted and informed of these results.

Will my results be private? All results will be confidential to the greatest extent possible. You will receive your results and all references to results in official reports or in documents that will have a random number associated with your drinking water sample. Reports and documents will not contain your name or address. The Navy will not share any personal information that you provide, such as name, address, email, or phone number.



FACT SHEET PFOA & PFOS Drinking Water Health Advisories



Overview

EPA has established health advisories for PFOA and PFOS based on the agency's assessment of the latest peer-reviewed science to provide drinking water system operators, and state, tribal and local officials who have the primary responsibility for overseeing these systems, with information on the health risks of these chemicals, so they can take the appropriate actions to protect their residents. EPA is committed to supporting states and public water systems as they determine the appropriate steps to reduce exposure to PFOA and PFOS in drinking water. As science on health effects of these chemicals evolves, EPA will continue to evaluate new evidence.

Background on PFOA and PFOS

PFOA and PFOS are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). PFOA and PFOS have been the most extensively produced and studied of these chemicals. They have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes.

Because these chemicals have been used in an array of consumer products, most people have been exposed to them. Between 2000 and 2002, PFOS was voluntarily phased out of production in the U.S. by its primary manufacturer. In 2006, eight major companies voluntarily agreed to phase out their global production of PFOA and PFOA-related chemicals, although there are a limited number of ongoing uses. Scientists have found PFOA and PFOS in the blood of nearly all the people they tested, but these studies show that the levels of PFOA and PFOS in blood have been decreasing. While consumer products and food are a large source of exposure to these chemicals for most people, drinking water can be an additional source in the small percentage of communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example, an industrial facility where these chemicals were produced or used to manufacture other products or an airfield at which they were used for firefighting.

EPA's 2016 Lifetime Health Advisories

EPA develops health advisories to provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. In 2009, EPA published provisional health advisories for PFOA and PFOS based on the evidence available at that time. The science has evolved since then and EPA is now replacing the 2009 provisional advisories with new, lifetime health advisories.

FACT SHEET

PFOA & PFOS Drinking Water Health Advisories

EPA's 2016 Lifetime Health Advisories, continued

To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the health advisory levels at 70 parts per trillion. When both PFOA and PFOS are found in drinking water, the <u>combined</u> concentrations of PFOA and PFOS should be compared with the 70 parts per trillion health advisory level. This health advisory level offers a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in drinking water.

How the Health Advisories were developed

EPA's health advisories are based on the best available peer-reviewed studies of the effects of PFOA and PFOS on laboratory animals (rats and mice) and were also informed by epidemiological studies of human populations that have been exposed to PFASs. These studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects and other effects (e.g., cholesterol changes).

EPA's health advisory levels were calculated to offer a margin of protection against adverse health effects to the most sensitive populations: fetuses during pregnancy and breastfed infants. The health advisory levels are calculated based on the drinking water intake of lactating women, who drink more water than other people and can pass these chemicals along to nursing infants through breastmilk.

Recommended Actions for Drinking Water Systems

Steps to Assess Contamination

If water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 parts per trillion, water systems should quickly undertake additional sampling to assess the level, scope and localized source of contamination to inform next steps

Steps to Inform

If water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 parts per trillion, water systems should promptly notify their State drinking water safety agency (or with EPA in jurisdictions for which EPA is the primary drinking water safety agency) and consult with the relevant agency on the best approach to conduct additional sampling.

Drinking water systems and public health officials should also promptly provide consumers with information about the levels of PFOA and PFOS in their drinking water. This notice should include specific information on the risks to fetuses during pregnancy and breastfed and formula-fed infants from exposure to drinking water with an individual or combined concentration of PFOA and PFOS above EPA's health advisory level of 70 parts per trillion. In addition, the notification should include actions they are taking and identify options that consumers may consider to reduce risk such as seeking an alternative drinking water source, or in the case of parents of formula-fed infants, using formula that does not require adding water.

FACT SHEET PFOA & PFOS Drinking Water Health Advisories

Recommended Actions for Drinking Water Systems, continued

Steps to Limit Exposure

A number of options are available to drinking water systems to lower concentrations of PFOA and PFOS in their drinking water supply. In some cases, drinking water systems can reduce concentrations of perfluoroalkyl substances, including PFOA and PFOS, by closing contaminated wells or changing rates of blending of water sources. Alternatively, public water systems can treat source water with activated carbon or high pressure membrane systems (e.g., reverse osmosis) to remove PFOA and PFOS from drinking water. These treatment systems are used by some public water systems today, but should be carefully designed and maintained to ensure that they are effective for treating PFOA and PFOS. In some communities, entities have provided bottled water to consumers while steps to reduce or remove PFOA or PFOS from drinking water or to establish a new water supply are completed.

Home drinking water treatment units are typically certified by independent third party organizations against American National Standards Institute (ANSI) standards to verify their contaminant removal claims. Some home filters remove impurities using activated carbon and reverse osmosis, which are the same technologies utilized by public water supply systems to remove PFOA and PFOS. However, there currently are no ANSI protocols for testing home treatment systems to verify that these devices effectively remove PFOA and PFOS or how frequently the filters should be changed in order to maintain removal efficiency. NSF International is currently developing such protocols.

Other Actions Relating to PFOA and PFOS

Between 2000 and 2002, PFOS was voluntarily phased out of production in the U.S. by its primary manufacturer, 3M. EPA also issued regulations to limit future manufacturing, including importation, of PFOS and its precursors, without first having EPA review the new use. A limited set of existing uses for PFOS (fire resistant aviation hydraulic fluids, photography and film products, photomicrolithography process to produce semiconductors, metal finishing and plating baths, component of an etchant) was excluded from these regulations because these uses were ongoing and alternatives were not available.

In 2006, EPA asked eight major companies to commit to working toward the elimination of their production and use of PFOA, and chemicals that degrade to PFOA, from emissions and products by the end of 2015. All eight companies have indicated that they have phased out PFOA, and chemicals that degrade to PFOA, from emissions and products by the end of 2015. Additionally, PFOA is included in EPA's proposed Toxic Substance Control Act's Significant New Use Rule (SNUR) issued in January 2015 which will ensure that EPA has an opportunity to review any efforts to reintroduce the chemical into the marketplace and take action, as necessary, to address potential concerns.

EPA has not established national primary drinking water regulations for PFOA and PFOS. EPA is evaluating PFOA and PFOS as drinking water contaminants in accordance with the process required by the Safe Drinking Water Act (SDWA). To regulate a contaminant under SDWA, EPA must find that it: (1) may have adverse health effects; (2) occurs frequently (or there is a substantial likelihood that it occurs frequently) at levels of public health concern; and (3) there is a meaningful opportunity for health risk reduction for people served by public water systems.

FACT SHEET PFOA & PFOS Drinking Water Health Advisories

Other Actions Relating to PFOA and PFOS, continued

EPA included PFOA and PFOS among the list of contaminants that water systems are required to monitor under the third Unregulated Contaminant Monitoring Rule (UCMR 3) in 2012. Results of this monitoring effort are updated regularly and can be found on the publicly-available National Contaminant Occurrence Database (NCOD) (https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule#3). In accordance with SDWA, EPA will consider the occurrence data from UCMR 3, along with the peer reviewed health effects assessments supporting the PFOA and PFOS Health Advisories, to make a regulatory determination on whether to initiate the process to develop a national primary drinking water regulation.

In addition, EPA plans to begin a separate effort to determine the range of PFAS for which an Integrated Risk Information System (IRIS) assessment is needed. The IRIS Program identifies and characterizes the health hazards of chemicals found in the environment. IRIS assessments inform the first two steps of the risk assessment process: hazard identification, and dose-response. As indicated in the 2015 IRIS Multi-Year Agenda, the IRIS Program will be working with other EPA offices to determine the range of PFAS compounds and the scope of assessment required to best meet Agency needs. More about this effort can be found at https://www.epa.gov/iris/iris-agenda.

Where Can I Learn More?

- EPA's Drinking Water Health Advisories for PFOA and PFOS can be found at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos
- PFOA and PFOS data collected under EPA's Unregulated Contaminant Monitoring Rule are available: https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule
- EPA's stewardship program for PFAS related to TSCA: <a href="https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/and-polyfluoroalkyl-substances-pfass-under-tsca
- EPA's research activities on PFASs can be found at: http://www.epa.gov/chemical-research/
- The Agency for Toxic Substances and Disease Registry's Perflourinated Chemicals and Your Health webpage at: http://www.atsdr.cdc.gov/PFC/





DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/1425 May 23, 2018

Town of Coupeville and Fort Casey Treatment Plant Parcel No R13114-250-4610 PO Box 725 Coupeville, WA 98239 RECEIVED
MAY 3 1 2018

TOWN OF COUPEVILLE

Dear Property Owner:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

I am writing you regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville to inform you that we received the preliminary sampling results for your community well. The preliminary sampling results indicate that the drinking water remains <a href="https://example.com/below

As an extra precaution, these preliminary results are going through a subsequent validation process to confirm their accuracy. Because validation of results can take several weeks to complete, we wanted to share the preliminary testing results immediately to keep you informed of the process every step of the way. Please find the detailed preliminary test results of your residence's drinking water attached here in Enclosures 1 and 2. Please find a handout enclosed that will assist you in understanding your laboratory analytical results (see Enclosure 3). We will follow up with the validated results as soon as that process is complete.

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors.

5726 Ser N46/1425 May 23, 2018

We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to the Navy Public Affairs Officer, Ms. Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely,

C. MOORE Captain, U.S. Navy Commanding Officer

Enclosures: 1. Summary of Preliminary Data Results

2. Preliminary Data Report

3. Understanding Data Packages



TOWN OF COUPEVILLE & FT. CASEY TREATEMENT PLANT KEYSTONE HILL WELL (WELL 108) COUPEVILLE, WA 98239

WI-CV-1RW23-0318 Date Collected: 3/23/2018

Time Collected: 09:25

Preliminary Results Provided: May 23, 2018

MAY 3 1 2018 TOWN OF COUPEVILLE

Below are the **preliminary** test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	62.3	70
PFOS and PFOA (cumulative) ¹	62.3	70

¹Only detected values of PFOS and PFOA are summed.

- VIII.	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	12.3	Not applicable
Perfluorohexanoic acid (PFHxA)	35.7	Not applicable
Perfluoroheptanoic acid (PFHpA)	9.99	Not applicable
Perfluorohexane sulfonate (PFHxS)	53.3	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion



Committee III	Cree Colland And I									Analytical	Analytical Laboratory
Sample ID: W	Sample ID: WI-CV-IKW23-0318									FPA Mothod 537	hod 527
Client Data					-					DIA MEL	/cc non
Name: Project: Location:	CH2M Hill CTO-4041 Navy Clean NASWI DW	Matrix: Date Collected:		Drinking Water 23-Mar-18 09:25	Labo Lab S Date	Laboratory Data Lab Sample: Date Received:	1800571-05 27-Mar-18 09:39	05 8 09:39	Column:	BEH C18	
A											
DEDE		Conc. (ng/L)	DF	TOD	00T	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		12.3	0.435	4.90	9.81		B8C0184	29-Mar-18	0.2551	02 4 22 16:30	- 1
DELLEA		35.7	0.855	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr-16 16:30	
DEH-S		66.6	0.523	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr-18 16:30	
PEOA		53.3	0.407	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr 18 16:30	
PENA		62.3	1.06	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr-18 16:30	
PEOS		ND	1.41	4.90	9.81		B8C0184	29-Mar-18	0.2551	03 Apr. 18 16:30	
PFUS		ND	1.02	4.90	9.81		B8C0184	29-Mar-18	0.255 L	03-Apr-18 16:30	
Marchan		ND	1.26	4.90	9.81		R8C0184	29-Mar-18	0.255 1	03-Api-16 16:30	
EtFOS A A		ND	2.98	4.90	9.81		B8C0184	29-Mar-18	0.255.1	03-Apr-18 16:30	
DET 15.4		ND	1.89	4.90	9.81		B8C0184	29-Mar-18	0.2551	03 Apr 18 16:30	
PEDA		ND	0.250	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apt-18 16:30	
PET.DA		ND	0.934	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr 19 16:30	
PETADA		QN N	0.925	4.90	9.81		B8C0184	29-Mar-18	0.2551	03-Apr-18 16:30	
I sholed Ctondard		ND	0.762	4.90	9.81		B8C0184	29-Mar-18	0.2551	03 Apr 18 16:30	
rancica Stallarus	S	% Recovery		Limits		Onalifiers	Ratch	Extraoted	Co		-
13C2-PFHxA	SURR	102		70 130			Dancel	Evil acteu	Samp Size	Analyzed	Dilution
13C2-PFDA	SURR	106		70 130			B&C0184	29-Mar-18	0.255 L	03-Apr-18 16:30	_
d5-EtFOSAA	SURR	83.1		70 - 130			B8C0184	29-Mar-18	0.255 L	03-Apr-18 16:30	-
		1.60		051 - 07			B8C0184	29-Mar-18	0.255 L	03-Apr-18 16:30	-
DL - Detection Limit	LOD - Limit of Detection LOO - Limit of quantitation	LCL-UCL- Lo	wer control limit	LCL-UCL- Lower control limit - upper control limit		When repo	rted, PFHxS, P	FOA and PFOS	include both linea	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.	
		resuits reported to the DL	d to the DL.			Only the lin	ear isomer is r	Only the linear isomer is reported for all other analytes	her analytes.		

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT WELL 487
COUPEVILLE, WA 98239
WI-CV-1RW24-0318

MAY **3 1** 2018

RECEIVED

TOWN OF COUPEVILLE

Date Collected: 3/23/2018 Time Collected: 09:00

Preliminary Results Provided: May 23, 2018

Below are the <u>preliminary</u> test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

March 2018	
Result (ppt)	Health Advisory (ppt)
ND	70
ND	70
ND	70
	Result (ppt)

¹Only detected values of PFOS and PFOA are summed.

The second secon	March 2018	11-11-11-1
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	ND	Not applicable
Perfluorohexanoic acid (PFHxA)	ND	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion



	Cred Telandr (190										
Sample ID: W	Sample 1D: WI-CV-1RW24-0318									EPA Method 537	10d 537
Client Data					Labo	Laboratory Data					
Name:	CH2M Hill	Matrix:		Drinking Water	Lab S	Lab Sample:	1800571-07	70	Column:	BEH C18	
Location:	C10-4041 Navy Clean NASWI DW	Date Collected:		23-Mar-18 09:00	Date	Date Received:	27-Mar-18 09:39	8 09:39			
Analyte		Conc. (ng/L)	DF	LOD	T00	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		QN	0.437	4.94	9.88		B8C0184	29-Mar-18	0.253 L.	03-Apr-18 16:55	-
PFHxA		ND	0.860	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	
PrHpA Pru 6		ND	0.526	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	-
PFHXS		QN	0.410	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	-
PFUA		ND	1.07	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
PFINA		QN	1.42	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
PFUS		ND	1.03	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
FFDA		ND	1.26	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
Merosaa		ND	3.00	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
EIFOSAA DEI 1-4		QN	1.91	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
PFDIA		QN :	0.252	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
PFLOA		Q	0.940	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
PETaDA		Q !	0.931	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	-
I sheled Standards		ON I	0.767	4.94	88.6		B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	_
Labered Standard	s lype	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size		Dilution
13C2-PFHxA	SURR	94.8		70 - 130			B8C0184	29-Mar-18	0.253.1	5.55	-
13C2-PFDA	SURR	112		70 - 130			B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	
do-EtFOSAA	SURR	84.7		70 - 130			B8C0184	29-Mar-18	0.253 L	03-Apr-18 16:55	
DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCL- Lower control Results reported to the DL	ower control limit ed to the DL.	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.		When repo	rted, PFHxS, I	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	include both line ther analytes.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT WELL 106
COUPEVILLE, WA 98239
WI-CV-1RW25-0318

MAY 3 1 2018

TOWN OF COUPEVILLE

RECEIVED

3 1 ZUIO

Date Collected: 3/23/2018 Time Collected: 08:30

Preliminary Results Provided: May 23, 2018

Below are the <u>preliminary</u> test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹ Only detected values of PFOS and PFOA are summed.

	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	1.39 J	Not applicable
Perfluorohexanoic acid (PFHxA)	1.20 J	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion



Sample ID: WI-	Sample ID: WI-CV-1RW25-0318										EPA Method 537	od 537
Client Data Name: Project: Location:	CH2M Hill CTO-4041 Navy Clean NASWI DW		Matrix: Date Collected:		Drinking Water 23-Mar-18 08:30	Labo Lab S Date	Laboratory Data Lab Sample: Date Received:	1800571-09 27-Mar-18 09:39	99	Column:		
Analyte			Conc. (ng/L)	DI	TOD	Γ00	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS			1.39	0.436	4.92	9.84	J	B8C0184	29-Mar-18	0.254 L	03-Apr-18 17-19	-
PFHXA			1.20	0.857	4.92	9.84	-	B8C0184	29-Mar-18	0.2541.	03-Apr-18 17:19	
PrhpA			QN	0.524	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	
PFHXS			ND	0.408	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	-
PFOA			ND	1.06	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	
PEOC			ON	1.42	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	-
PFUS			QN .	1.02	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	_
Marosaa			ND	1.26	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	_
Mer USAA F+FOCA A			ND	2.99	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	-
EIFOSAA DEI 1-4			ND	1.90	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	
PEDA			QN :	0.251	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	. –
DETERNA			QN :	0.936	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	_
PETaDA			QN .	0.928	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	_
I shaled County			ON	0.764	4.92	9.84		B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	_
Labercu Standards	lype		% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size		Dilution
13C2-PFHxA	SURR	Design of the second	8.98		70 - 130			B8C0184	29-Mar-18	0.254.1	01.7	-
13C2-PFDA	SURR	. 20	97.1		70 - 130			B8C0184	29-Mar 18	0.2541	03-Api-16 17.19	
d5-EtFOSAA	SURR	H L	85.3		70 - 130			B8C0184	29-Mar-18	0.254 L	03-Apr-18 17:19	
DL - Detection Limit	LOD - Limit of Detection	ction	TCT-NCI-1	Lower control	LCL-UCL- Lower control limit - upper control limit	=	When rep	oorted, PFHxS, P	FOA and PFOS i	include both line	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers	
	LOQ - Limit of quantitation	ntitation	Results repo	Results reported to the DL.	2		Only the	linear isomer is a	Only the linear isomer is reported for all other analytes.	her analytes.		

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT WELL 190 COUPEVILLE, WA 98239 WI-CV-1RW26-0318 Date Collected: 3/23/2018 RECEIVED
MAY 3 1 2018

TOWN OF COUPEVILLE

Time Collected: 3/23/20

Preliminary Results Provided: May 23, 2018

Below are the <u>preliminary</u> test results for your drinking water sampled on March 23, 2018. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹ Only detected values of PFOS and PFOA are summed.

	March 2018	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	0.513 J	Not applicable
Perfluorohexanoic acid (PFHxA)	ND	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion



Laboratory Data
Matrix: Date Collected:
Conc. (ng/L)
0.513
ND
ND
Q ;
Q !
QN ;
QN
Q ;
QN .
Q S
ON S
ON !
N N
UND SE YO
% Kecovery
97.0
103
86.5
LCL-UCL- Lower control limit - upper control limit Results reported to the DL.

Anatek Labs, Inc.

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

Batch #:

180907038

Project Name:

962018

Analytical Results Report

Sample Number Client Sample ID Matrix Comments	180907038-001 DIST Drinking Water		Sampling Sampling Sample Lo	Time	9/6/20	Date: I	ime Received tion Date	9/7/2018 9/19/2018	1:00 PM
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobuta	nesulfonic acid - PFBS	ND	ug/L	0.025	0.09	9/24/2018	TGT	EPA 537	quamici
Control of the Contro	anoic acid - PFHpA	< 0.005	ug/L	0.005	0.01	9/24/2018	TGT	EPA 537	Ĩ
	anesulfonic acid - PFHxS	0.0199	ug/L	0.005	0.03	9/24/2018	TGT	EPA 537	J
	anoic aid - PFNA	ND	ug/L	0.005	0.02	9/24/2018	TGT	EPA 537	
	nesulfonic acid - PFOS	ND	ug/L	0.01	0.04	9/24/2018	TGT	EPA 537	
Perfluoroocta	noic acid - PFOA	0.0341	ug/L	0.005	0.02	9/24/2018	TGT	EPA 537	

Sample Number Client Sample ID Matrix Comments	180907038-002 WELL 1-08 Drinking Water		Sampling Sample Lo	Time	9/6/20 10:30		ime Received tion Date	9/7/2018 9/19/2018	1:00 PM	
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier	
	esulfonic acid - PFBS	ND	ug/L	0.025	0.09	9/24/2018	TGT	EPA 537		
	noic acid - PFHpA	0.0104	ug/L	0.005	0.01	9/24/2018	TGT	EPA 537		
Perfluorohexan	esulfonic acid - PFHxS	0.0580	ug/L	0.005	0.03	9/24/2018	TGT	EPA 537		
Perfluorononan		ND	ug/L	0.005	0.02	9/24/2018	TGT	EPA 537		
Perfluorooctane	sulfonic acid - PFOS	ND	ug/L	0.01	0.04	9/24/2018	TGT	EPA 537		
Perfluorooctano	ic acid - PFOA	0.0706	ug/L	0.005	0.02	9/24/2018	TGT	EPA 537		

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099



APR 2 4 2018

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Client:

TOWN OF COUPEVILLE

Batch #:

180326034

Address:

P.O. BOX 725

Project Name:

EPA 537

Addicoo

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

100000001 000

Analytical Results Report

Sample Number	180326034-002		Sampling	Date	3/23/20	18 Date/III	me Received	3/26/2018	9:52 AM
Client Sample ID	DIST		Sampling	Time	9:40 AN	// Extract	ion Date	4/4/2018	
Matrix	Drinking Water		Sample Lo	ocation					
Comments									
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutanesulfonic acid - PF 3	ND	ug/L	0.025	0.09	4/10/2018	TGT	EPA 537	
√Perfluoroheptanoic acid - PFHpA	0.00607	ug/L	0.005	0.01	4/10/2018	TGT	EPA 537	J
✓ Perfluorohexanesulfonic acid - PF#x	50.0356	ug/L	0.005	0.03	4/10/2018	TGT	EPA 537	
√ Perfluorononanoic aid - PFNA	ND	ug/L	0.005	0.02	4/10/2018	TGT	EPA 537	
√Perfluorooctanesulfonic acid - PFØ5	ND	ug/L	0.01	0.04	4/10/2018	TGT	EPA 537	
√Perfluorooctanoic acid - PFOA	0.0374	ug/L	0.005	0.02	4/10/2018	TGT	EPA 537	

Authorized Signature

Kathleen A. Sattler, Lab Manager

The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Kathleen a. Sattler

MCL EPA's Maximum Contaminant Level

ND Not Detected

PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.

The results reported relate only to the samples indicated.

Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

Batch #:

180326034

Project Name:

EPA 537

Analytical Results Report

Sample Number Client Sample ID Matrix Comments	180326034-001 WELL 1-08 Drinking Water		Sampling Sampling Sample L	Time	3/23/20 9:30 Al		me Received ion Date	3/26/2018 4/4/2018	9:52 AM
Parameter		Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Perfluorobutane	esulfonic acid - PF. 35	ND	ug/L	0.025	0.09	4/10/2018	TGT	EPA 537	
Perfluoroheptar	noic acid - PFHpA	0.0111	ug/L	0.005	0.01	4/10/2018	TGT	EPA 537	
Perfluorohexan	esulfonic acid - PF##	0.0567	ug/L	0.005	0.03	4/10/2018	TGT	EPA 537	
Perfluorononan	oic aid - PFNA	ND	ug/L	0.005	0.02	4/10/2018	TGT	EPA 537	
Perfluorooctane	sulfonic acid - PF 0 \$	ND	ug/L	0.01	0.04	4/10/2018	TGT	EPA 537	
Perfluorooctano	oic acid - PFOA	0.0640	ug/L	0.005	0.02	4/10/2018	TGT	EPA 537	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Fridav. April 13. 2018

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Client:

TOWN OF COUPEVILLE

Address:

P.O. BOX 725

COUPEVILLE, WA 98239

Attn:

JOSEPH GROGAN

Batch #:

180326034

Project Name:

EPA 537

Analytical Results Report Quality Control Data

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Perfluorooctanoic acid - PFOA	0.0214	ug/L	0.02	107.0	50-150	4/4/2018	4/10/2018
Perfluorooctanesulfonic acid - PFOS	0.0407	ug/L	0.04	101.8	50-150	4/4/2018	4/10/2018
Perfluorononanoic aid - PFNA	0.0234	ug/L	0.02	117.0	50-150	4/4/2018	4/10/2018
Perfluorohexanesulfonic acid - PFHxS	0.0313	ug/L	0.03	104.3	50-150	4/4/2018	4/10/2018
Perfluoroheptanoic acid - PFHpA	0.0107	ug/L	0.01	107.0	50-150	4/4/2018	4/10/2018
Perfluorobutanesulfonic acid - PFBS	0.0737	ug/L	0.09	81.9	50-150	4/4/2018	4/10/2018

Sample Number	Borometer	Sample	MS		MS		AR		
	Parameter	Result	Result	Units	Spike	%Rec	%Rec	Prep Date	Analysis Date
180326034-002	Perfluorooctanoic acid - PFOA	0.0374	0.112	ug/L	0.08	93.3	70-130	4/4/2018	4/10/2018
180326034-002	Perfluorooctanesulfonic acid - PFOS	ND	0.154	ug/L	0.16	96.3	70-130	4/4/2018	4/10/2018
180326034-002	Perfluorononanoic aid - PFNA	ND	0.0874	ug/L	0.08	109.3	70-130	4/4/2018	4/10/2018
180326034-002	Perfluorohexanesulfonic acid - PFHxS	0.0356	0.144	ug/L	0.12	90.3	70-130	4/4/2018	4/10/2018
180326034-002	Perfluoroheptanoic acid - PFHpA	0.00607	0.0472	ug/L	0.04	102.8	70-130	4/4/2018	4/10/2018
180326034-002	Perfluorobutanesulfonic acid - PFBS	ND	0.299	ug/L	0.36	83.1	70-130	4/4/2018	4/10/2018

Method Blank					
Parameter	Result	Units	PQL	Prep Date	Analysis Date
Perfluorobutanesulfonic acid - PFBS	ND	ug/L	0.09	4/4/2018	4/10/2018
Perfluoroheptanoic acid - PFHpA	ND	ug/L	0.01	4/4/2018	4/10/2018
Perfluorohexanesulfonic acid - PFHxS	ND	ug/L	0.03	4/4/2018	4/10/2018
Perfluorononanoic aid - PFNA	ND	ug/L	0.02	4/4/2018	4/10/2018
Perfluorooctanesulfonic acid - PFOS	ND	ug/L	0.04	4/4/2018	4/10/2018
Perfluorooctanoic acid - PFOA	ND	ug/L	0.02	4/4/2018	4/10/2018

AR

Acceptable Range

ND PQL Not Detected Practical Quantitation Limit

RPD

Relative Percentage Difference

Comments: SAMPLES SUBCONTRACTED TO ANATEK-M

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com 504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Login Report

Customer Name: TOWN OF COUPEVILLE

Order ID:

180326034

P.O. BOX 725

Order Date:

3/26/2018

COUPEVILLE

WA

98239

Contact Name: JOSEPH GROGAN

Project Name: EPA 537

Comment: SAMPLES SUBCONTRACTED TO ANATEK-M

Sample #:

180326034-001

Customer Sample #:

WELL 1-08

Recv'd:

Date Collected:

3/23/2018

Quantity: 3

Matrix: Drinking Water Collector: JOSEPH GROGAN Date Received:

3/26/2018 9:52:00 AM

Time Collected:

9:30 AM

Comment:

Test **UCMR 537** Lab

Method EPA 537 **Due Date**

Priority

180326034-002

M

4/5/2018

Normal (~10 Days)

Sample #:

Matrix: Drinking Water Collector: JOSEPH GROGAN

Customer Sample #:

DIST

Date Collected:

3/23/2018

Quantity: 3

Date Received:

3/26/2018 9:52:00 AM

Time Collected:

9:40 AM

Comment:

Test

Lah M

Method

Due Date

Priority

UCMR 537

EPA 537

4/5/2018

Normal (~10 Days)

SAMPLE CONDITION RECORD

Samples received in a cooler? Samples received intact? What is the temperature of the sample(s)? (°C) Samples received with a COC? Samples received within holding time? Are all sample bottles properly preserved? Labels and chain agree? Total number of containers?

Yes

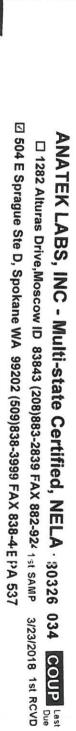
Yes 12.2/12.3

Yes

Yes

Yes Yes

6



3/26/2018

Chain of Custody - Drinking Water Analysis

3-26-18 0 0 pgs2	Date Received	3/18	Shipping/Delivery Date 3/23/18
Mondan	Received By	Acres 1	Customer Signature
Other (specify): IRS/C/I PFC's SWBS Way Method 537 M-538	Nalyses SOCs Definition Phase II SOC Semivolatiles Destricides Carbamates Destricides Destricides Diquat Diquat Destricides SOC Diquat Diquat Destricides	Check Desired Analyses Vocs & DBPs VOC GOTHM HAA5 TOC RADs Gross Alpha Gross Beta RAD 226 RAD 228 RAD 228 Uranium	IOCs □ Sodium □Fluoride □Nitrate □Nitrite □ Phase II IOC Metals □ Primary IOC Package with Cn Waiver □ Secondary/Optional IOC Package □ Complete IOC Package □ Cyanide □ Asbestos
Received Intact Labels & Chains Agree	☐ Labels & Cha ☐ Ice/Ice-Packs ☐ Custody Seals ☐ Preservatives	Date & Time Collected 3/23/18 0930 Sampler Signature	Well 1-08 Well Tag # COX2C 1-08 Sampler Name Grogan
Payment due with samples, unless credit has been established	n Jurisdiction be sent to:	Public Water System Jurisdiction A copy of the report to be sent to:	Sample Type Sample Purpose Raw Water Distribution Plant Tap Other Purpose
Island	County		CITY STATE ZIP Coupeville WA 98239
utilities 1@townofcoupeville org	Phone Number Fax Number		ADDRESS PO Box 725
15550	Water System #		WATER SYSTEM Coupeville

Subcontracted analyses will be clearly noted on the analytical report. In Labs may be subcontacted to other accredited labs if necessary. This message serves as notice of this possibility.

ANATEK LABS, INC - Multi-state Certified, NELA 1st SAMP 3/23/2018 1st RCVD ☐ 1282 Alturas Drive,Moscow ID 83843 (208)883-2839 FAX 882-92⁄E ÞA 537

☑ 504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX 838-4

Chain of Custody - Drinking Water Analysis

Samples submitted to Anatek Labs may be subcontacted to other according to the if necessary	A	Check Des Check Des	Sample Collection Location Distribution Tap Well Tag # Date & Time Collected 3/23//8 09 40 Sampler Name Sampler Signature Grogan	Sample Type Sample Purpose Raw Water Distribution Plant Tap Other Purpose Public Wat A copy of the Other Purpose	CITY STATE ZIP Coupeville WA 98239	ADDRESS PO Box 725	SEND REPORT TO Joseph Grogan
Date Received	Received By	Desired Analyses SOCs Phase II SOC Semivolatiles Herbicides Carbamates Pesticides EDB Phase V SOC eta Diquat Glyphosate Dioxin	ollected OReceived Labels & OR 10 Custody	Public Water System Jurisdiction A copy of the report to be sent to:	County	Fax Number	Dhom Nimb
3-26-10 17952	Mismolastra	Other (specify): PFC's SWBS Method 537 M-536 537	Receiving Check List ed Intact & Chains Agree	Payment due with samples, unless credit has been established	Island	utilities1@townofcoupeville.org	/ NOON /



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/1066 March 29, 2018

Town of Coupeville and Fort Casey Treatment Plant Parcel No R13114-250-4610 PO Box 725 Coupeville, WA 98239

Dear Property Owner:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

I am writing you regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville to inform you that we received the validated sampling results for your community well. The validated sampling results indicate that the drinking water remains below the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required for the community well at this time.

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors. We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to Navy Public Affairs Officer, Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely,

G. C. MOORE

Captain, U.S. Navy Commanding Officer

Enclosures:

1. Summary of Validated Data Results

2. Validated Data Reports

Town of Coupeville and Fort Casey Treatment Plant (Keystone Hill Well 108)

434 Wanamaker Road, Coupeville, WA 98239

Sample ID: WI-CV-1RW23-1017 Date Collected: October 19, 2017

Time Collected: 14:25

Validated Results Provided: March 29, 2018

APR 09 2018

TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA. The Navy also analyzed for additional parameters for wells with PFAS detections, including select dissolved metals and general water quality parameters. These results are shown below.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisory (ppt)
Perfluorooctanoic acid (PFOA)	64.7	70
PFOS and PFOA (cumulative) ¹	64.7	70

¹ Only detected values of PFOS and PFOA are summed.

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	14.8	Not applicable
Perfluorohexanoic acid (PFHxA)	33.7	Not applicable
Perfluoroheptanoic acid (PFHpA)	10.6	Not applicable
Perfluorohexane sulfonate (PFHxS)	65.2	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable

ND - Analyte not detected in the sample

ppt - parts per trillion

These parameters were not validated because the purpose of collection was for drinking water characteristics only.

B – Analyte not detected above the level reported in blanks

CM-1 – Reciprocal centimeters

H – The analyte was analyzed outside of holding time

J – Analyte present. Value may or may not be accurate or precise.

mg/L - Milligrams per liter

U – The material was analyzed for, but not detected

Town of Coupeville and Fort Casey Treatment Plant (Well 487)

434 Wanamaker Road, Coupeville, WA 98239

Sample ID: WI-CV-1RW24-1017 Date Collected: October 19, 2017

Time Collected: 15:18

Validated Results Provided: March 29, 2018



TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisory (ppt)
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹ Only detected values of PFOS and PFOA are summed.

ppt - parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	ND	Not applicable
Perfluorohexanoic acid (PFHxA)	5.06 U-MBL	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable

ND - Analyte not detected in the sample

Town of Coupeville and Fort Casey Treatment Plant (Well 106)

434 Wanamaker Road, Coupeville, WA 98239

Sample ID: WI-CV-1RW25-1017 Date Collected: October 19, 2017

Time Collected: 12:38

Validated Results Provided: March 29, 2018



TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisor (ppt)
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹Only detected values of PFOS and PFOA are summed.

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	1.72 J	Not applicable
Perfluorohexanoic acid (PFHxA)	4.96 U-MBL	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

ND – Analyte not detected in the sample

ppt - parts per trillion

Town of Coupeville and Fort Casey Treatment Plant (Well 190)

434 Wanamaker Road, Coupeville, WA 98239

Sample ID: WI-CV-1RW26-1017 Date Collected: October 19, 2017

Time Collected: 13:10

Validated Results Provided: March 29, 2018



TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisory (ppt)
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹Only detected values of PFOS and PFOA are summed.

ND - Analyte not detected in the sample

ppt - parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	ND	Not applicable
Perfluorohexanoic acid (PFHxA)	4.84 U-MBL	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid	ND	Not applicable
(EtFOSAA)		
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable

Town of Coupeville and Fort Casey Treatment Plant (Post Treatment, Distribution Point)

434 Wanamaker Road, Coupeville, WA 98239

Sample ID: WI-CV-1RW27-1017 Date Collected: October 19, 2017

Time Collected: 12:10

Validated Results Provided: March 29, 2018

APR 0.9 2018

TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA. The Navy also analyzed for additional parameters for wells with PFAS detections, including select dissolved metals and general water quality parameters. These results are shown below.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisory (ppt)
Perfluorooctanoic acid (PFOA)	36.8	70
PFOS and PFOA (cumulative) ¹	36.8	70

¹ Only detected values of PFOS and PFOA are summed.

ND - Analyte not detected in the sample

ppt – parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	9.46 J	Not applicable
Perfluorohexanoic acid (PFHxA)	19.9	Not applicable
Perfluoroheptanoic acid (PFHpA)	5.31 J	Not applicable
Perfluorohexane sulfonate (PFHxS)	38.8	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable

	October 2017	
Chemical Name	Result (units mg/L)	
Total suspended solids (TSS)	2.0 U	
Wet Chemistry	Result (units CM-1)	
UV254	0.0243	
Dissolved Wet Chemistry	Result (units mg/L)	
Dissolved organic carbon	1.7	

These parameters were not validated because the purpose of collection was for drinking water characteristics only.

B – Analyte not detected above the level reported in blanks

CM-1 – Reciprocal centimeters

H – The analyte was analyzed outside of holding time

J – Analyte present, but result is estimated

mg/L - Milligrams per liter

U – The material was analyzed for, but not detected

Town of Coupeville and Fort Casey Treatment Plant (Well 287)

434 Wanamaker Road, Coupeville, 98239

Sample ID: WI-CV-1RW60-1017 Date Collected: October 19, 2017

Time Collected: 15:30

Validated Results Provided: March 29, 2018



TOWN OF COUPEVILLE

Below are the <u>validated</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). Based upon the completion of data validation, qualifier flags have been updated. A description of updates is listed in the table below. Changes are made based upon the review of the sample and the associated quality control samples.

The Navy's Environmental Restoration Program analyzed for 14 per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established an LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

Chemical Name	October 2017 Result (ppt)	Health Advisory (ppt)
Perfluorooctanoic acid (PFOA)	5.64 J	70
PFOS and PFOA (cumulative) ¹	5.64 J	70

¹ Only detected values of PFOS and PFOA are summed.

ND - Analyte not detected in the sample

ppt – parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	1.11 J	Not applicable
Perfluorohexanoic acid (PFHxA)	5.07 U-MBL	Not applicable
Perfluoroheptanoic acid (PFHpA)	0.572 J	Not applicable
Perfluorohexane sulfonate (PFHxS)	5.00 J	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable

J - Analyte present, but result is estimated

Client Data					Labo	Laboratory Data					
Name: CH2N	CH2M Hill	Matrix:	Drink	Drinking Water	Lab S	ab Sample:	1701526-12	2	Column	RFH C 18	
Project: CLE Location: DW	CLEAN CTO-4041 NASWI DW	Date Collected:		19-Oct-17 14:25	Date	Date Received:	21-Oct-17 09:30	09:30	Coding	DITICIO	
Analyte		Conc. (ug/L)	DL	TOD.	D001	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		0.0148	0.000427	0.00482	0.00964		B7J0173	26-Oct-17	0 259 1	5	-
PFHxA		0.0337	0.000639	0.00482	0.00964	V	B7J0173	26-Oct-17	0 259 1	01-Nov-17 03:15	_ ,
PFHpA		0.0106	0.000514	0.00482	0.00964	`	B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFHxS		0.0652	0.000400	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFOA		0.0647	0.00104	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFNA		ND	0.00139	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFOS		ND	0.00100	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
PFDA		ND	0.00123	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
MeFOSAA		ND	0.00293	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
EIFOSAA		N	0.00186	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFUnA		ND	0.000246	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFDoA		ND	0.000917	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFTrDA		ND	0.000909	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
PFTeDA		ND	0.000749	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFH _X A	SURR	107		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
13C2-PFDA	SURR	102		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
d5-EtFOSAA	SURR	103		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
DL - Detection Limit											

NWIZIC31,+

L	d branched isomers	When repeated, PFLSS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	oned, PFHxS, P	When rep Only the l	111	t - upper control lin	LCL-UCL- Lower control limit - upper control limit Results reported to the DL	LCL-UCL Results re	LOD - Limit of Detection LOQ - Limit of quantitation		DL - Detection Limit
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173			70 - 130		107	SURR		d5-EtFOSAA
	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173			70 - 130		91.2	SURR		I3C2-PFDA
	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173			70 - 130		100	SURR		13C2-PFH _X A
tion	Analyzed Dilution	Samp Size .	Extracted S	Batch	Qualifiers		Limits		% Recovery	Type	ds	abeled Standards
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000787	ND			PF TeDA
	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000955	ND			Pr IrDA
	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000964	ND			PFDoA
_	01-Nov-17 03:40	0.247 L 01-3	26-Oct-17	B7J0173		0.0101	0.00506	0.000258	ND			PFUnA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00195	ND			ETFOSAA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00308	ND			MerOSAA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00130	ND			PFDA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00105	ND			PFOS
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00146	ND			PENA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.00109	ND			PFOA
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000420	ND			PIHXS
_	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000540	ND			PrHpA
MBL	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173	4	0.0101	0.00506	0.000671	0.00135	0.00506		PTHXA
	01-Nov-17 03:40	0.247 L 01-	26-Oct-17	B7J0173		0.0101	0.00506	0.000449	ND			PFBS
tion	Analyzed Dilution	Samp Size	Extracted S	Batch	Qualifiers	DOJ	TOD	DL	Conc. (ug/L)			Analyte
											DW	Location:
	DETI C10		09:30	21-Oct-17 09:30	Date Received:	Date	19-Oct-17 15:18	Date Collected: 19-Oc	Date Co	IW;	CLEAN CTO-4041 NASWI	Project:
	RFH C 18	Column:	4	1701526-14	Lab Sample:	Lab S	Drinking Water	Drinki	Matrix:		CH2M Hill	Name:
					Laboratory Data	Labo						Client Data
537	EPA Method 537										Sample ID: WI-CV-1RW24-1017	Sample ID: W

MW, WISS 1,7

_		When reported, PFIKS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	include both lines her analytes	When reported, PFHKS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	orted, PFHx8. Finear isomer is r	When rep Only the l	mit	it - upper control lin	LCL-UCL- Lower control limit - upper control limit Results reported to the DL	LCL-UCL Results re	LOD - Limit of Detection LOQ - Limit of quantitation	LOD - Limi	DL - Detection Limit
	-	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173			70 - 130		98.8	SURR		d5-EtFOSAA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173			70 - 130		106	SURR		13C2-PFDA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173			70 - 130		105	SURR		13C2-PFHxA
	Dilution	Analyzed I	Samp Size	Extracted	Batch	Qualifiers		Limits		% Recovery	Type	T	Labeled Standards
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000770	ND			PFTeDA
	-	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000935	ND			PFTrDA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000944	ND			PFDoA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000253	ND			PFUnA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00191	ND			EtFOSAA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00301	ND			MeFOSAA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00127	UN			PFDA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00103	ND			PFOS
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00143	CIN			PFNA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.00107	ND			PFOA
	_	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000411	ND			PFHxS
	-	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173		0.00991	0.00496	0.000528	ND			PFHpA
MBL	-	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173	£	0.00991	0.00496	0.000657	0.00446 0.00224 6	0.0		PFHxA
	-	01-Nov-17 01:47	0.252 L	26-Oct-17	B7J0173	J	0.00991	0.00496	0.000439	0.00172			PFBS
	Dilution	Analyzed	Samp Size	Extracted	Batch	Qualifiers	DOT	TOD	DL	Conc. (ug/L)			Analyte
												DW	Location: [
				09:30	21-Oct-17 09:30	Date Received:	Date	19-Oct-17 12:38		Date Collected:		CLEAN CTO-4041 NASWI	Project: C
		BFH C18	Column:	20	1701526-08	Lab Sample:	Lab S	Drinking Water	Drink	Matrix:		CH2M Hill	Name: C
						Laboratory Data	Labo						Client Data
	od 537	EPA Method 537										Sample ID: WI-CV-1RW25-1017	Sample ID: WI-

TW121211.7

L	ets.	When reported, PFHx8. PFOA and PFO8 include both linear and branched isomets. Only the linear isomer is reported for all other analytes.	include both lini ther analytes	When reported, PFHvS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	ported, PFHxS, I linear isomer is	When re Only the	mit	LCL-UCL- Lower control limit - upper control limit Results reported to the DL	LCL-UCL- Lower control li Results reported to the DL	LCL-UCL Results rep	LOD - Limit of Detection LOQ - Limit of quantitation		DL - Detection Limit
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173			70 - 130		90.7	SURR		d5-EtFOSAA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173			70 - 130		99.1	SURR		13C2-PFDA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173			70 - 130		102	SURR		13C2-PFHxA
-	Dilution	Analyzed	Samp Size	Extracted	Batch	Qualifiers		Limits		% Recovery	Type	sb.	Labeled Standards
 	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000751	ND			PFTeDA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000912	ND			PFTrDA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000921	ND			PFDoA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000247	ND			PFUnA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00187	ND			EtFOSAA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00294	ND			MeFOSAA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00124	ND			PFDA
	1 2	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00101	ND			PFOS
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00139	ND			PFNA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.00104	ND			PFOA
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000401	ND			PFHxS
	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000515	ND			PFHpA
ME	1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173	#	0.00967	0.00484	0.000641	0.00484 0.00185- M	0.0		PFHxA
_	2 1	01-Nov-17 02:12	0.259 L	26-Oct-17	B7J0173		0.00967	0.00484	0.000428	ND			PFBS
	Dilution	Analyzed	Samp Size	Extracted	Batch	Qualifiers	DOOT	TOD	TO	Conc. (ug/L)			Analyte
												DW	Location:
				09:30	21-Oct-17 09:30	Date Received:	Date	19-Oct-17 13:10		Date Collected:	INASWI	CLEAN CTO-4041 NASWI	Project:
		BEH C18	Column:	0	1701526-10	ab Sample:	Lab S	Drinking Water	Drin	Matrix		CH2M Hill	Name:
						Laboratory Data	Labor						Client Data
	hod 537	EPA Method 537)17	Sample ID: WI-CV-1RW26-1017	Sample ID: W
-													

rule 123/17



	When reported, PFHxS, PFOA and PFOS include both linear and branched assurers	nelude both line	FOA and PFOS	ned, PFHxS, I	When repo	it	t - upper control lim	LCL-UCL- Lower control limit - upper control limit	TCT-UCT	LOD - Limit of Detection	DL - Detection Limit
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		111	SURR	d5-EtFOSAA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		97.7	SURR	3CZ-PEDA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		103	SURR	13C2-PFH _K A
Dilution	Analyzed L	Samp Size	Extracted	Batch	Qualifiers		Limits		% Recovery	Type	Labeled Standards
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000769	ND		Pr IeDA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000933	ND		PHIDA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000942	ND		PFD0A
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000252	ND		Pr UnA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00191	ND		EIFOSAA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00301	ND		MerUSAA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00127	ND		FIDA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00103	ND		PFOS
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00142	N		TENA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00107	0.0368		PFOA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000411	0.0388		TT LIND
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	J	0.00989	0.00495	0.000527	0.00531		тгира
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	D ₁	0.00989	0.00495	0.000656	0.0199		BEII-A
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	J	0.00989	0.00495	0.000438	0.00946	*	PER.
Dilution	Analyzed 1	Samp Size	Extracted	Batch	Qualifiers	DOOT	CIOT	DL	Conc. (ug/L)		Analyte
	BEH C18	Column:	09:30	1701526-06 21-Oct-17 09:30	Lab Sample: Date Received:	Lab Si Date I	Drinking Water 19-Oct-17 12:10	100	Matrix: Date Collected:	CH2M Hill CLEAN CTO-4041 NASWI DW	Name: CH2M Hill Project: CLEAN C' Location: DW
					Laboratory Data	Labor					Data
od 537	EPA Method 537									W27-1017	Sample ID: WI-CV-1RW27-1017

Sample ID: WI-CV-1RW60-1017	0-1017									EPA Method 537	od 537
Client Data					Labo	Laboratory Data					
Name: CH2M Hill		Matrix:	Drinkir	Drinking Water	Lab S	Lab Sample:	1701526-16	6	Column	REH C18	
Project: CLEAN CTC	CLEAN CTO-4041 NASWI	Date Collected:		19-Oct-17 15:30	Date I	Date Received:	21-Oct-17 09:30	09:30		DELI CIO	
					•						
Analyte		Conc. (ug/L)	DL	TOD	DOT	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		0.00111	0.000449	0.00507	0.0101	٠,	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
PFHxA	0	0.00507 0.00320 (0.000673	0.00507	0.0101	<u>_</u>	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	MBL
PFHpA		10	0.000541	0.00507	0.0101	ا پ	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFHxS		0.00500	0.000421	0.00507	0.0101	J	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFOA		0.00564	0.00110	0.00507	0.0101	J	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PENA		ND	0.00146	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFOS		ND	0.00106	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFDA		ND	0.00130	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
MeFOSAA		ND	0.00308	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
EtFOSAA		ND	0.00196	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
PFUnA		ND	0.000259	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFDoA		CIN	0.000966	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
PFTrDA		ND	0.000957	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFTeDA		ND	0.000788	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size		Dilution
13C2-PFHxA	SURR	98.6		70 - 130			B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
13C2-PFDA	SURR	94.4		70 - 130			B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
d5-EtFOSAA	SURR	111		70 - 130			B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
DL - Detection Limit	LOD - Limit of Detection		LCL-UCL- Lower control limit - upper control limit	- upper control lim	-	When rep	orted, PFHxS.	PFOA and PFOS	include both line	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers	

LOQ - Limit of quantitation

Results reported to the DL

Only the linear isomer is reported for all other analytes

NW:21231,+

PFOS PFOA PFBS Sample ID: Analyte Client Data Name: Location: Project: Date Collected WF-RW02-0317 WF-RW02 nanogram(s) part(s) per per liter trillion onc. (ng/L 3.93 3.02 2.64 E RL - Reporting limit DL - Detection limit The limit of quantitation (LOQ) is the lowest level at which the laboratory can that this compound is present reliably measure this compound with a known degree of confidence and accuracy. "see" this compound is **not** present The limit of detection (LOD) is the lowest level at which the laboratory can reliably The detection limit (**DL**)is the lowest level at which the laboratory can reliably "see" Sample Data Sample Size: 8.65 8.65 8.65 TOD 0.2891Drinking Water DOT 17.3 17.3 17.3 Qualifiers Laboratory Data Lab Sample: Date Analyzed: QC Batch: Only the linear isomer is reported for all other analytes When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers Results reported to DL. LCL-UCL - Lower control limit - upper control limit SUR 13C2-PFDA SUR 13C2-PFHxA Labeled Standard 04-Apr-17 15:37 Column: BEH C18 B7C0165 Date Received: Date Extracted: 117 %R 103 quality control This section contains the data validator. information used by CL-UCL 30-Mar-2017 7:50 29-Mar-2017 9:21 70 - 130EPA Method 537 70 - 130 Qualifiers

There is not a health advisory level for PFBS; therefore, no action is currently being taken based on this result. This chemical has health effects information that can be used to evaluate potential impact under the Navy's Environmental Restoration Program.

The result for PFOS:

is estimated.

The "J" qualifier means that the PFOA was detected but the *amount* detected

PFOS was not detected in the sample.

This is reported as "ND" (Non-Detect).

This column identifies the data qualifiers that apply to a given result. Possible laboratory qualifiers are:

6.53 ng/L (6.53 ppt).

PFOA was detected in the sample at

The result for PFOA:

PFBS was not detected in the sample.

This is reported as "ND" (Non-Detect).

The result for PFBS

"J" (Estimated Value) – indicates the value reported for the analyte is below the LOQ and was detected. The value reported is considered estimated.

"B" (Blank) – this compound was also detected in the method blank.

"D" (Diluted Sample) – sample result was taken from a diluted sample.



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/3846 December 22, 2017

Town of Coupeville and Fort Casey Treatment Plant Parcel No R13114-250-4610 PO Box 725 Coupeville, WA 98239

JAN 0 2 2018

TOWN OF COUPEVILLE

Dear Property Owner:

SUBJECT: NAVAL OUTLYING LANDING FIELD COUPEVILLE AND AULT FIELD DRINKING WATER TESTING RESULTS

I am writing you regarding the U.S. Navy's drinking water investigation around Naval Air Station (NAS) Whidbey Island's Ault Field and Outlying Landing Field (OLF) Coupeville to inform you that we received the preliminary sampling results for your community well. The preliminary sampling results indicate that the drinking water remains below the Environmental Protection Agency's (EPA) Lifetime Health Advisory (LHA) for perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA). These results indicate that no further action is required for the community well at this time. We are providing residents serviced by this community well a copy of this letter with the preliminary drinking water results.

As an extra precaution, these preliminary results are going through a subsequent validation process to confirm their accuracy. Because validation of results can take several weeks to complete, we wanted to share the preliminary testing results immediately to keep you informed of the process every step of the way. Please find the detailed preliminary test results of your residence's drinking water attached here in Enclosures 1 and 2. Please find a handout enclosed that will assist you in understanding your laboratory analytical results (see Enclosure 3). We will follow up with the validated results as soon as that process is complete.

The Navy is working in partnership with the EPA Region 10, Agency for Toxic Substances and Disease Registry, Washington State Department of Health, and Island County Public Health to determine what additional actions are appropriate and to develop a long-term solution associated with PFOA and PFOS in other residents' drinking water resulting from NAS Whidbey Island activities. As the scientific community learns more, the EPA health advisory levels may change or additional standards may be developed by other federal, state, or local agencies. These changes may necessitate additional actions to be taken by the Navy. If your property is affected by any future changes, we will contact you to coordinate any additional actions.

Please know that the health and safety of this community is a top priority for me and I am committed to keeping you informed on developments that may impact you and your neighbors.

5726 Ser N46/3846 December 22, 2017

We will continue to update our public website, http://go.usa.gov/xkMBc, as information, research, and regulation from federal, state or local agencies evolve in order to keep residents informed about the investigation at NAS Whidbey Island. You may also reach out to the Navy Public Affairs Officer, Ms. Leslie Yuenger, at (360) 396-6387 or by email at PAO_feedback@navy.mil with any questions.

Thank you for your time and cooperation.

Sincerely,

G. C. MOORE Captain, U.S. Navy

Commanding Officer

Enclosures: 1. Summary of Preliminary Data Results

2. Preliminary Data Report

3. Understanding Data Packages

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (KEYSTONE HILL WELL 108)

PO BOX 725, COUPEVILLE, WA 98239

Sample ID: WI-CV-1RW23-1017 Date Collected: 10/19/2017 Time Collected: 14:25

Preliminary Results Provided: December 22, 2017

JAN 0 2 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA. The Navy also analyzed for additional parameters for wells with PFAS detections, including select dissolved metals and general water quality parameters. These results are shown below.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	October 2017	Handah Ankinana (maa)
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	64.7	70
PFOS and PFOA (cumulative) ¹	64.7	70

¹Only detected values of PFOS and PFOA are summed.

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	14.8	Not applicable
Perfluorohexanoic acid (PFHxA)	33.7 B	Not applicable
Perfluoroheptanoic acid (PFHpA)	10.6	Not applicable
Perfluorohexane sulfonate (PFHxS)	65.2	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid		Not applicable
(EtFOSAA)	ND	
N-Methylperfluoro-1-octanesulfonamidoacetic acid		Not applicable
(MeFOSAA)	ND	

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

ppt - parts per trillion

Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable
Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

Results for other chemical parameters

	October 2017
Chemical Name	Result (units mg/L)
Total Metals	
Iron	0.47 U
Dissolved Metals	
Aluminum	0.44 U
Calcium	64
Iron	0.47 U
Magnesium	31
Manganese	0.043
Potassium	5.1
Silicon	17
Wet Chemistry	
Alkalinity	240
Ammonia	0.15 J
Bicarbonate Alkalinity as CaCO3	240
Carbonate Alkalinity as CaCO3	5.0 U
Chloride	28
Fluoride	0.041 J
Hydroxide Alkalinity as CaCO3	5.0 U
Nitrate/Nitrite	2.1
Phosphate	0.11 H
Sulfate	25
Total dissolved solids (TDS)	390 B
Total suspended solids (TSS)	2.0 U
Wet Chemistry	Result (units CM-1)
UV254	0.0173
Dissolved Wet Chemistry	Result (units mg/L)
Dissolved organic carbon	1.2

CM-1 - Reciprocal centimeters

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample

ppt - parts per trillion

H - The analyte was analyzed outside of holding time.

J - Analyte present. Value may or may not be accurate or precise

MG/L - Milligrams per liter

U - The material was analyzed for, but not detected

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Matrix: Drinking Water Laboratory Data Conc. (ug/L) DL LOD LOQ Qualifiers 0.0148 0.000427 0.00482 0.00964 B 0.0337 0.000639 0.00482 0.00964 B 0.0166 0.000514 0.00482 0.00964 B 0.0652 0.000400 0.00482 0.00964 B 0.0657 0.00104 0.00482 0.00964 B 0.0647 0.00104 0.00482 0.00964 B ND 0.001039 0.00482 0.00964 B ND 0.001039 0.00482 0.00964 B ND 0.00123 0.00482 0.00964 B ND 0.00123 0.00482 0.00964 B ND 0.000293 0.00482 0.00964 B ND 0.000999 0.00482 0.00964 B ND 0.000909 0.00964 D D											Analytical Laboratory	boratory
CH2M Hill Matrix: Drinking Water Laboratory Data	Sample ID: WI-CV-1RW2.	3-1017									EPA Method 537	od 537
CH2M Hill CLEAN CTO-4041 NASWI CLEAN CTO-4041 NASWI Date Collected: 19-Oct-1714:25 Date Received: Conc. (ug/L) Conc. (ug/L) DL LOQ Qualifiers 0.0148 0.00482 0.00964 B 0.0106 0.00482 0.00964 B 0.0106 0.00139 0.00482 0.00964 B 0.00139 0.00482 0.00964 ND 0.00186 0.00482 0.00964 ND 0.00186 0.00482 0.00964 ND 0.00186 0.00482 0.00964 ND 0.00186 0.00482 0.00964 ND 0.000918 0.00982 0.00964 ND 0.000918 0.00482 0.00964 ND 0.000918 0.00982 0.00964 ND 0.000918 0.00964 ND 0.00964 ND 0.000918 0.00964 ND 0.000918 0.00964 ND 0.00964 ND 0.009664 ND 0.00	Client Data					Labor	atory Data					
CLEAN CTO-4041 NASW1 Date Collected: 19-Oct-17 14:25 Date Received: 0n: DW Conc. (ug/L) DL LOD LOQ Qualifiers			Matrix:	Drinki	ng Water	Lab Sg	mple:	1701526-12	2	Column		
AA		-4041 NASWI	Date Col		1-17 14:25	Date R	eceived:	21-Oct-17 09:30	06:30		BEH CI8	
AA AA ND 0.00148 0.000427 0.00482 0.00964 B 0.0037 0.00653 0.00964 B 0.0652 0.00964 B 0.0652 0.00964 B 0.0652 0.00964 B 0.0652 0.00964 C 0.00642 0.00964 C 0.0652 0.00964 C 0.00642 0.00964 C 0.0652 0.00964 C 0.00647 0.00104 0.00482 0.00964 C 0.0647 0.00104 0.00482 0.00964 C 0.0647 0.00139 0.00482 0.00964 C 0.0647 C 0.00139 0.00482 0.00964 C 0.00	Analyte		Conc. (ug/L)	DL	TOD	-001	Oualifiers	Batch	Extracted	Samp Size	bazylenA	Dilution
AA	FBS		0.0148	0.000427	0.00482	0.00964	,	B710173	26-Oct-17	0.259.1	-	-
AA	FHxA		0.0337	0.000639	0.00482	0.00964	В	B7J0173	26-Oct-17	0.2591	01-Nov-17 03:15	
AA AA AA AA AA AA AA AB AB AB	FHpA		0.0106	0.000514		0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	
AA	FHxS		0.0652	0.000400	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
AA AA AA AA AA AA AA AA AA AB AB	FOA		0.0647	0.00104	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
AA AA AA AA AA AA AB AB AB AB	FNA		QN	0.00139	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
AA	FOS		ND	0.00100	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
AA ND 0.00293 0.00482 0.00964 AD 0.00186 0.00482 0.00964 ND 0.00186 0.00482 0.00964 ND 0.000246 0.00482 0.00964 ND 0.000917 0.00482 0.00964 ND 0.000999 0.00482 0.00964 ND 0.000749 0.00482 0.00964 SURR 107 70 - 130 SURR 102 70 - 130 SAA SURR 103	-DA		ND	0.00123	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
ND	leFOSAA		ON	0.00293	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
ND 0.000246 0.00964	IFOSAA		ND	0.00186	0.00482	0.00964		B710173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
ND 0.000917 0.00064 ND 0.000909 0.00082 Standards	FUnA		ND	0.000246	0.00482	0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
ND 0.000909 0.00482 0.00964 1	·DoA		QN	0.000917		0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
ndards Type % Recovery 0.000749 0.000482 0.00964 SURR 107 70 - 130 SURR 102 70 - 130 SURR 102 70 - 130 SURR 102 70 - 130	TrDA		ND	0.000909		0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
Type	FIEDA		ND	0.000749		0.00964		B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	_
SURR 107 70 - 130 SURR 102 70 - 130 SURR 103 70 - 130	abeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
SURR 102 70 - 130 SURR 103 70 120	3C2-PFHxA	SURR	107		70 - 130			B7J0173	26-Oct-17	0.259 L	3.15	-
SURP 103	3C2-PFDA	SURR	102		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
001-07	5-EtFOSAA	SURR	103		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 03:15	-
		LOQ - Limit of quantitation	Results rep	Results reported to the DL.			Only the	inear isomer is	Only the linear isomer is reported for all other analytes.	ther analytes.	Only the linear isomer is reported for all other analytes.	

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (POST TREATMENT, DISTRIBUTION POINT)

PO BOX 725, COUPEVILLE, WA 98239 Sample ID: WI-CV-1RW27-1017 Date Collected: 10/19/2017

Time Collected: 12:10

Preliminary Results Provided: December 22, 2017

RECEIVED

JAN 02 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA. The Navy also analyzed for additional parameters for wells with PFAS detections, including select dissolved metals and general water quality parameters. These results are shown below.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	October 2017	Haralda A. L. Carroll
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	36.8	70
PFOS and PFOA (cumulative) ¹	36.8	70

¹Only detected values of PFOS and PFOA are summed.

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	9.46 J	Not applicable
Perfluorohexanoic acid (PFHxA)	19.9 B	Not applicable
Perfluoroheptanoic acid (PFHpA)	5.31 J	Not applicable
Perfluorohexane sulfonate (PFHxS)	38.8	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid		Not applicable
(EtFOSAA)	ND	
N-Methylperfluoro-1-octanesulfonamidoacetic acid		Not applicable
(MeFOSAA)	ND	

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

ppt - parts per trillion

Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable
Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

Results for other chemical parameters

	October 2017
Chemical Name	Result (units mg/L)
Total Metals	
Iron	0.47 U
Dissolved Metals	
Aluminum	0.44 U
Calcium	61
Iron	0.47 U
Magnesium	34
Manganese	0.0044 J
Potassium	6.1
Silicon	17
Wet Chemistry	
Alkalinity	250
Ammonia	0.12 J
Bicarbonate Alkalinity as CaCO3	250
Carbonate Alkalinity as CaCO3	5.0 U
Chloride	37
Fluoride	0.070 J
Hydroxide Alkalinity as CaCO3	5.0 U
Nitrate/Nitrite	2.2
Phosphate	0.19 H
Sulfate	22
Total dissolved solids (TDS)	420 B
Total suspended solids (TSS)	2.0 U
Wet Chemistry	Result (units CM-1)
UV254	0.0243
Dissolved Wet Chemistry	Result (units mg/L)
Dissolved organic carbon	1.7

CM-1 - Reciprocal centimeters

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample

ppt - parts per trillion

H - The analyte was analyzed outside of holding time.

J - Analyte present. Value may or may not be accurate or precise

MG/L - Milligrams per liter

U - The material was analyzed for, but not detected



	When reported, PFHsS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	nclude both line her analytes.	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	orted, PFHxS, F inear isomer is r	When rep Only the I	Ħ	- upper control lin	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	LCL-UCL- Results rep	LOD - Limit of Detection LOQ - Limit of quantitation	LOD - Limi LOQ - Limi	DL - Detection Limit
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		111	SORK		Dir Collect
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		9/./	SURK		dS-EtEOSAA
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173			70 - 130		103	SURK		3C2-PEDA
Dilution	Analyzed	Samp Size	EXITACION	Dateil	Qualificis		- Commes		103	Clinn		I3C2_PEHvA
-	- 1	6. 6.		Ratch	Omalifiare		Limits		% Recovery	Type	_1	Labeled Standards
_	01-Nov-17 01-22	0.2531	26-Oct-17	B7J0173		0.00989	0.00495	0.000769	ND			PFIEDA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000933	ND			PET DA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000942	N			201
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000252	Z Z			PEDA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00191	i Z			DELLA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00301	N N			OSAA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00127	i Z			MeEOSAA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00103	Z			PEDA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00142	i e			PEOS
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.00107	0.0368			PENIA
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173		0.00989	0.00495	0.000411	0.0388			
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	J	0.00989	0.00495	0.000527	0.00531			DEH-S
_	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	В	0.00989	0.00495	0.000656	0.0199			DEU-A
-	01-Nov-17 01:22	0.253 L	26-Oct-17	B7J0173	J	0.00989	0.00495	0.000438	0.00946			PEBS
Dilution	Analyzed D	Samp Size	Extracted	Batch	Qualifiers	DOOT	LOD	DL	Conc. (ug/L)			Analyte
	BEH C18	Column:	09:30	1701526-06 21-Oct-17 09:30	Laboratory Data Lab Sample: Date Received:	Lab Sa Date F	Drinking Water 19-Oct-1712:10		Matrix: Date Collected:	V V	CH2M Hill CLEAN CTO-4041 NASWI DW	Name: Project: Location:
												Client Data
od 537	EPA Method 537										Sample ID: WI-CV-1RW27-1017	ımple ID: WI

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (WELL 287)

PO BOX 725, COUPEVILLE, WA 98239

Sample ID: WI-CV-1RW60-0117 Date Collected: 10/19/2017 Time Collected: 15:30

Preliminary Results Provided: December 22, 2017

JAN 0 2 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

October 2017	
Result (ppt)	Health Advisory (ppt)
ND	70
5.64 J	70
5.64 J	70
	Result (ppt) ND 5.64 J

¹ Only detected values of PFOS and PFOA are summed.

	October 2017	Health Advisory
Chemical Name	Result (ppt)	(ppt)
Perfluorobutane sulfonate (PFBS)	1.11 J	Not applicable
Perfluorohexanoic acid (PFHxA)	3.20 JB	Not applicable
Perfluoroheptanoic acid (PFHpA)	0.572 J	Not applicable
Perfluorohexane sulfonate (PFHxS)	5.00 J	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

ppt - parts per trillion

Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample ppt - parts per trillion



Sample ID: WI	Sample ID: WI-CV-1RW60-1017									EPA Method 537	hod 537
Client Data Name:	СН2М НіІІ	Matrix:		Drinking Water	Labo	Laboratory Data Lab Sample:	1701526-16	91	Column:	BEH C18	
Project: Location:	CLEAN CTO-4041 NASWI DW	Date C	Date Collected: 19-Oc	19-Oct-17 15:30	Date	Date Received:	21-Oct-17 09:30	7 09:30			
Analyte		Conc. (ug/L)	DI	TOD	007	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		0.00111	0.000449	0.00507	0.0101	J	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	
PFHxA		0.00320	0.000673	0.00507	0.0101	J, B	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
PFHpA		0.000572	0.000541	0.00507	0.0101	J	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFHxS		0.00500	0.000421	0.00507	0.0101	ſ	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFOA		0.00564	0.00110	0.00507	0.0101	J	B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFNA		QN	0.00146	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFOS		QN	0.00106	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	-
PFDA		QN	0.00130	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
MeFOSAA		QN	0.00308	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
EtFOSAA		ND	0.00196	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFUnA		ND	0.000259	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFD0A		ND	99600000	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PF IrDA		ND	0.000957	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
PFIEDA		ND	0.000788	0.00507	0.0101		B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	_
Labeled Standards	s Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	9.86		70 - 130			B7J0173	26-Oct-17	0.2461	01-Nov-17 04:04	-
13C2-PFDA	SURR	94.4		70 - 130			B7J0173	26-Oct-17	0.2461	01-Nov-17 04:04	
d5-EtFOSAA	SURR	111		70 - 130			B7J0173	26-Oct-17	0.246 L	01-Nov-17 04:04	
DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UC Results n	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	- upper control lim		When rep Only the 1	orted, PFHxS, inear isomer is	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	include both line	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.	S.

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (WELL 487)

PO BOX 725, COUPEVILLE, WA 98239

Sample ID: WI-CV-1RW24-1017 Date Collected: 10/19/2017

Time Collected: 15:18

Preliminary Results Provided: December 22, 2017

JAN 0 2 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	October 2017	11 11 41 1
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹Only detected values of PFOS and PFOA are summed.

ppt - parts per trillion

	October 2017	Health Advisory
Chemical Name	Result (ppt)	(ppt)
Perfluorobutane sulfonate (PFBS)	ND	Not applicable
Perfluorohexanoic acid (PFHxA)	1.35 JB	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample

ppt - parts per trillion



Sample ID: WI-CV-1RW24-1017	V-IRW24-1017									EPA Method 537	10d 537
Client Data Name: CH2 Project: CLE Location: DW	CH2M Hill CLEAN CTO-404I NASWI DW	Matrix: Date Co	llected:	Drinking Water 19-Oct-17 15:18	Labo Lab S Date	Laboratory Data Lab Sample: Date Received:	1701526-14 21-Oct-17 09:30	14 7 09:30	Column:	: BEH C18	
Analyte		Conc. (ug/L)	DF	TOD	T00	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		QN	0.000449	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	-
PFHxA		0.00135	0.000671	0.00506	0.0101	J. B	B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFHpA		QN	0.000540	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFHxS		QN	0.000420	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFOA		QN	0.00109	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFNA		QN	0.00146	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFOS		QN	0.00105	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFDA		QN	0.00130	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
MeFOSAA		ND	0.00308	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
EtFOSAA		QN	0.00195	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFUnA		QN	0.000258	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	-
PFDoA		ND	0.000964	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	-
PFTrDA		N N	0.000955	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
PFTeDA		ND	0.000787	0.00506	0.0101		B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	100		70 - 130			B7J0173	26-Oct-17	0.247 L.	01-Nov-17 03:40	-
13C2-PFDA	SURR	91.2		70 - 130			B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	
d5-EtFOSAA	SURR	107		70 - 130			B7J0173	26-Oct-17	0.247 L	01-Nov-17 03:40	_
DL - Detection Limit	LOD - Limit of Detection LOQ - Limit of quantitation	LCL-UCI Results re	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	- upper control lim	l _i E	When repo	orted, PFHxS,	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is renorted for all other analytes	include both line	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers Only the linear isomer is renorned for all other analyses	S.

TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (WELL 106)

PO BOX 725, COUPEVILLE, WA 98239

Sample ID: WI-CV-1RW25-1017 Date Collected: 10/19/2017 Time Collected: 12:38

Preliminary Results Provided: December 22, 2017

JAN 0 2 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	October 2017	IIIN-A-L-1
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹Only detected values of PFOS and PFOA are summed.

ppt - parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	1.72 J	Not applicable
Perfluorohexanoic acid (PFHxA)	2.24 JB	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid (EtFOSAA)	ND	Not applicable
N-Methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	ND	Not applicable
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample ppt - parts per trillion

Sample ID: WI	Sample ID: WI-CV-1RW25-1017									EPA Method 537	od 537
Client Data Name: Project: Location:	CH2M Hill CLEAN CTO-4041 NASWI DW	Matrix: Date Co	ellected:	Drinking Water 19-Oct-17 12:38	Labo Lab S Date	Laboratory Data Lab Sample: Date Received:	1701526-08 21-Oct-17 09:30	.8 09:30	Column:	BEH C18	
Analyte		Conc. (ug/L)	DI	TOD	007	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS		0.00172	0.000439	0.00496	0.00991	J	B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFHxA		0.00224	0.000657	0.00496	0.00991	J, B	B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFHpA		ND	0.000528	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	_
PFHxS		ND	0.000411	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFOA		ND	0.00107	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFNA		ND	0.00143	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFOS		ND	0.00103	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFDA		ND	0.00127	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
MeFOSAA		ND	0.00301	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
EtFOSAA		ND	0.00191	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	_
PFUnA		ND	0.000253	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	_
PFDoA		ON	0.000944	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFTrDA		ON	0.000935	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
PFTeDA		ON	0.000770	0.00496	0.00991		B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
Labeled Standards	Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105		70 - 130			B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	1
13C2-PFDA	SURR	901		70 - 130			B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	_
d5-EtFOSAA	SURR	8.86		70 - 130			B7J0173	26-Oct-17	0.252 L	01-Nov-17 01:47	-
DL - Detection Limit	LOD - Limit of Detection LOO - Limit of quantitation	LCL-UC Results ra	LCL-UCL- Lower control limit - upper control limit established reported to the DL.	- upper control lim	-=	When rep Only the	inear isomer is	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is renorted for all other analytes	include both lin	When reported. PFHxS, PFOA and PFOS include both linear and branched isomers Only the linear isomer is renorted for all other analytes	· S
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TOWN OF COUPEVILLE & FT. CASEY TREATMENT PLANT (WELL 190)

PO BOX 725, COUPEVILLE, WA 98239

Sample ID: WI-CV-1RW26-1017 Date Collected: 10/19/2017 Time Collected: 13:10

Preliminary Results Provided: December 22, 2017

RECEIVED

JAN 02 2018

TOWN OF COUPEVILLE

Below are the <u>preliminary</u> test results for your drinking water sampled on October 19, 2017. These results indicate that your drinking water is below the U.S. Environmental Protection Agency (EPA)'s lifetime health advisory (LHA) for Perfluorooctane Sulfonate (PFOS) and/or Perfluorooctanoic acid (PFOA). Once the Navy receives the final, validated results we will notify you and provide you with a copy of the validated results.

The Navy's Environmental Restoration Program analyzed for fourteen per- and polyfluoroalkyl substances (PFAS) as part of this drinking water investigation; however, PFOA and PFOS are the only PFAS for which EPA has established a LHA. The Navy provides bottled water when the sample results exceed the EPA's LHA.

If the EPA or the State of Washington Department of Ecology sets health advisories for other PFAS compounds in the future, then the Navy will evaluate necessary actions to take based on the health advisories.

Results of Laboratory Analytical Tests for PFAS with EPA Health Advisory Levels

	October 2017	Health Advisory (cost)
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorooctane Sulfonate (PFOS)	ND	70
Perfluorooctanoic acid (PFOA)	ND	70
PFOS and PFOA (cumulative) ¹	ND	70

¹Only detected values of PFOS and PFOA are summed.

ppt - parts per trillion

	October 2017	
Chemical Name	Result (ppt)	Health Advisory (ppt)
Perfluorobutane sulfonate (PFBS)	ND	Not applicable
Perfluorohexanoic acid (PFHxA)	1.85 JB	Not applicable
Perfluoroheptanoic acid (PFHpA)	ND	Not applicable
Perfluorohexane sulfonate (PFHxS)	ND	Not applicable
Perfluorononanoic acid (PFNA)	ND	Not applicable
Perfluoro-n-decanoic acid (PFDA)	ND	Not applicable
N-Ethylperfluoro-1-ocatanesulfonamidoacetic acid		Not applicable
(EtFOSAA)	ND	
N-Methylperfluoro-1-octanesulfonamidoacetic acid		Not applicable
(MeFOSAA)	ND	- 80 ES
Perfluoro-n-undecanoic acid (PFUnA)	ND	Not applicable

J - Analyte present, but result is estimated

ND - Analyte not detected in the sample

Perfluoro-n-dodecanoic acid (PFDoA)	ND	Not applicable
Perfluoro-n-tridecanoic acid (PFTrDA)	ND	Not applicable
Perfluoro-n-tetradecanoic acid (PFTeDA)	ND	Not applicable

J - Analyte present, but result is estimated

B - Analyte not detected above the level reported in blanks

ND - Analyte not detected in the sample

ppt - parts per trillion



Sample ID: W	Sample ID: WI-CV-1RW26-1017									EPA Method 537	lod 537
Client Data					Labo	Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinki	Drinking Water	Lab S	Lab Sample:	1701526-10	0	Column:	BEH C18	
Project:	CLEAN CTO-4041 NASWI	Date Col	Collected: 19-Oct	19-Oct-17 13:10	Date	Date Received:	21-Oct-17 09:30	09:30			
Location.	\$	Comp (mall)	2	uo I	_	OugliGore	Botch	Extraotod	Samp Ciro	Local de A	Dillustion
Analyte		Conc. (ug/L)	nr.	ron	רמל	Cualifiers	Datch	Extracted	Samp Size	Analyzed	Dilution
PFBS		ON	0.000428	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFHxA		0.00185	0.000641	0.00484	0.00967	J, B	B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFHpA		QN	0.000515	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	_
PFHxS		QN	0.000401	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFOA		ND	0.00104	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFNA		ND	0.00139	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFOS		QN	0.00101	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFDA		ND	0.00124	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
MeFOSAA		ON	0.00294	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
EtFOSAA		ND	0.00187	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFUnA		QN	0.000247	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFDoA		QN	0.000921	0.00484	0.00967		B710173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFTrDA		QN	0.000912	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
PFTeDA		ND	0.000751	0.00484	0.00967		B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
Labeled Standards	ds Type	% Recovery		Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	102		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	-
13C2-PFDA	SURR	99.1		70 - 130			B7J0173	26-Oct-17	0.259 L	01-Nov-17 02:12	_
d5-EtFOSAA	SURR	200.7		70 - 130			B7J0173	26-Oct-17	$0.259\mathrm{L}$	01-Nov-17 02:12	-
DL - Detection Limit	t LOD - Limit of Detection	LCL-UCL Results rer	LCL-UCL- Lower control limit - upper control limit Results reported to the DL.	t - upper control lin	l _±	When rep Only the	orted, PFHxS, inear isomer is	When reported, PFHxS, PFOA and PFOS include both Only the linear isomer is reported for all other analytes	s include both lin other analytes.	When reported, PFHxS, PFOA and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes.	S.
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Sample ID:

Client Data

Name

Date Collected

Project:

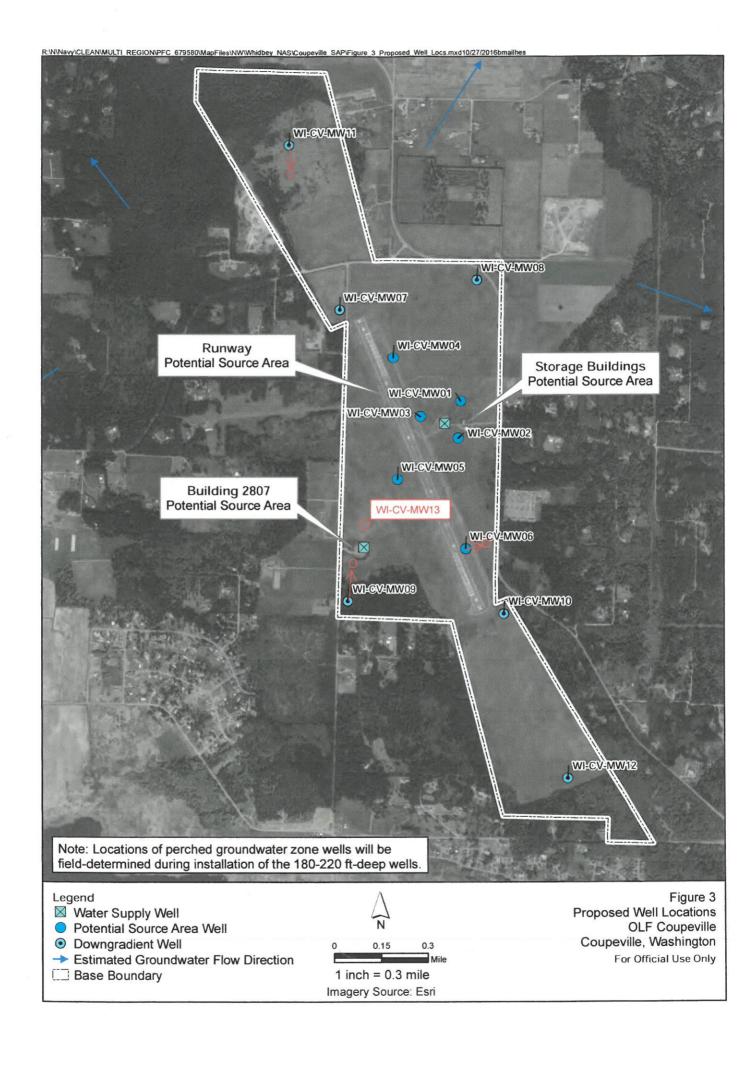
Location

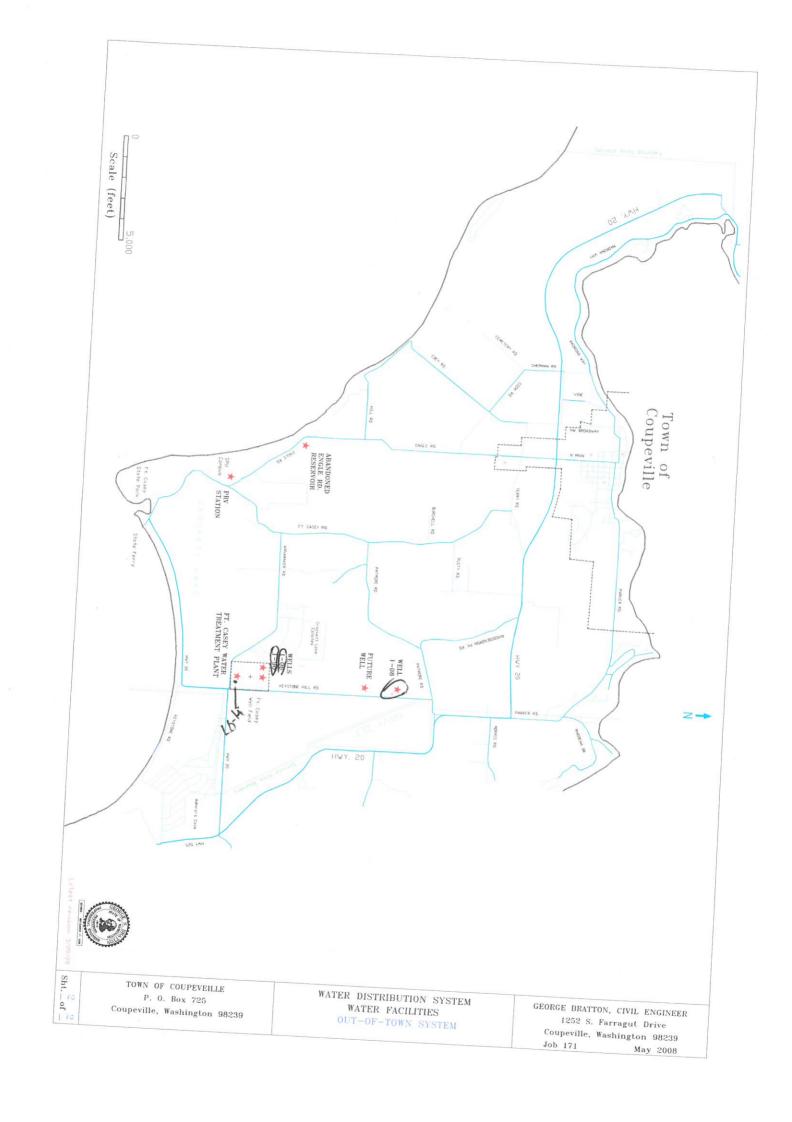
Analyte

PFOA PFOS

PFBS

NG1117171101VBC







Hello Residents,

I feel the need to respond to Ms. Maryon Attwood's letter to the Editor in the December 28 edition of the Whidbey News Times. Her letter's primary emphasis is on the Navy's draft Environmental Impact Statement (EIS), which is currently out for public comment. This is an important topic, and is of interest to many in the greater Coupeville community. However, the statement I want to address, one that seems to be included only for its emotional impact, is: "Today, we know that the worst is true – water is contaminated with a bad-acting fire-retardant chemical. In Coupeville's coffee shops and restaurants now, contaminated water is served..."

While I appreciate Ms. Atwood's passion, this type of intentional distortion has no place in a reasonable discussion. Clearly, it was meant only to instigate fear and panic in the community and was apparently written without regard to its emotional or economic effect. While the protection and future of our water supplies is of critical importance, it must be addressed using the best, most current, information available and without resorting to fearmongering.

Here are the FACTS

- Military Bases all over the Nation as well as civilian Fire Departments have used a fire fighting foam called AFFF. This foam was developed to put out petroleum fires, such as you would have with an airplane crash.
- This foam contains many chemicals, but two in particular are Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonate (PFOS). These compounds do not easily break down in the environment or the human body. They have a cumulative effect.
- These compounds are not currently regulated by the Department of Health, meaning, public and private water systems are not required to test for them.
- Recently, the Environmental Protection Agency (EPA) set lifetime health advisory levels
 for these two compounds at 70 parts per trillion (ppt). This is intended to be a safe and
 protective level against adverse health effects if you consume water, at this level or
 below, for an entire lifetime.

- Military bases around the country have started testing for these compounds. Here on Whidbey Island, this means the Navy is providing free testing for all wells within a one mile radius of their airfields.
- So far, the Navy has received results on 100 test samples of private wells. Six private wells
 in the OLF Coupeville area and one near Ault Field have come back above the EPA's
 lifetime advisory level. These homeowners have been provided temporary drinking water
 until a permanent solution can be found. The water from these wells are not a part of the
 public drinking water supply.
- The Town of Coupeville uses four wells in the Keystone and Ft. Casey area to supply water to the public. The water from all four wells is blended together before entering the Town's distribution system.
- Through qualified, outside testing laboratories, the Town and the Navy have independently conducted tests on our wells, and at the point the water enters our public distribution system. Three of the wells tested at the non-detect level for both compounds. The Keystone well tested at 59, 61 and 62 ppt for PFOA. At distribution, after the water is blended, it tested at 25, 27 and 38 ppt for PFOA. All of these results are below the EPA's lifetime advisory level.
- The Navy continues to provide free testing of private wells within the one mile radius of the airstrips. If you have not had your well tested, and would like to, call 360-396-1030 to make an appointment.
- The Navy is drilling groundwater monitoring wells to help Island County understand the movement of ground water in the area. More testing of private wells is needed. We are still in the information gathering stage.

People with different agendas are carelessly using the word 'contaminated' with reference to public drinking water. Technically, the definition of contaminated is: making something impure by exposure to or addition of a poisonous or polluting substance. Water can be contaminated by many different sources; naturally occurring geological factors, animals, agriculture, and manmade substances. However, I think when people hear "contaminated water is served" they believe it to be unsafe to drink. With the facts we have right now, I do not believe that is the case with the Town of Coupeville's drinking water. According to the County and State agencies charged with protecting public health, the Town's drinking water is safe.

You will hear people cite different countries and states who consider levels lower than 70 ppt to be unsafe. You will hear people claim to be 'experts' on PFOA and PFOS. Some people are holding public meetings, bringing in 'consultants' to talk about these compounds. I would remind you to question the information you are hearing. Just because we live in an age of instant information, does not make all people experts, or all sources credible, or all motives pure. Ask questions, be informed.

I do not claim to be an expert on safe drinking water. I have chosen to follow the advice, recommendations and requirements of the Environmental Protection Agency, the Agency for Toxic Substances and Disease Registry (a branch of the Center for Disease Control), the State Department of Health (DOH) and Island County Public Health. Using their guidelines, the Town of Coupeville's water is safe to drink. Do I wish our water was 100% free of all impurities? Yes. Do I think this is a realistic goal for water these days? No. Even though there may be some level of "contaminants" in drinking water, those levels may be such that they don't pose a threat to public health. And if the levels of any given "contaminant" exceed the water quality health standards set by the appropriate regulatory authorities, we would treat the water to reduce the level of "contaminant" so that it meets those water quality health standards.

I don't want to give the impression that this is not an important issue. It is. Safe drinking water is vital to the health and well-being of any community. I also understand this is just the beginning of the story. The EPA could lower their lifetime advisory threshold. The DOH could decide to regulate these compounds. We need more information on private wells and ground water movement. We need to take care of the individual homeowners with effected wells. We will continue to test the Town wells out of an abundance of caution. We will be vigilant and aggressive in our responsibility to provide the Town of Coupeville with safe drinking water. We will continue to be completely transparent as new issues arise and new information is received.

What's my bottom line on this subject? Don't panic. Don't make careless comments that can cause fear and distrust among your neighbors. Don't call into question the safety of our drinking water because you are trying to fortify your comments on the EIS. Don't thoughtlessly make a comment about Coupeville's coffee houses and restaurants that could affect their business. Please, please, act and speak responsibly.

And the absolute bottom line...The experts in regulating public water supply will confirm that the Town of Coupeville's water meets statewide standards and is deemed safe to drink.

I am always available and happy to answer questions about our drinking water or any other subject. You can find me in Town Hall...or a local coffee shop...or one of our many wonderful restaurants.

Molly Hughes Mayor

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FOR IMMEDIATE RELEASE

TOWN OF COUPEVILLE PRESS RELEASE - December 23, 2017

Town of Coupeville Wells - Water Sample Results from the Navy

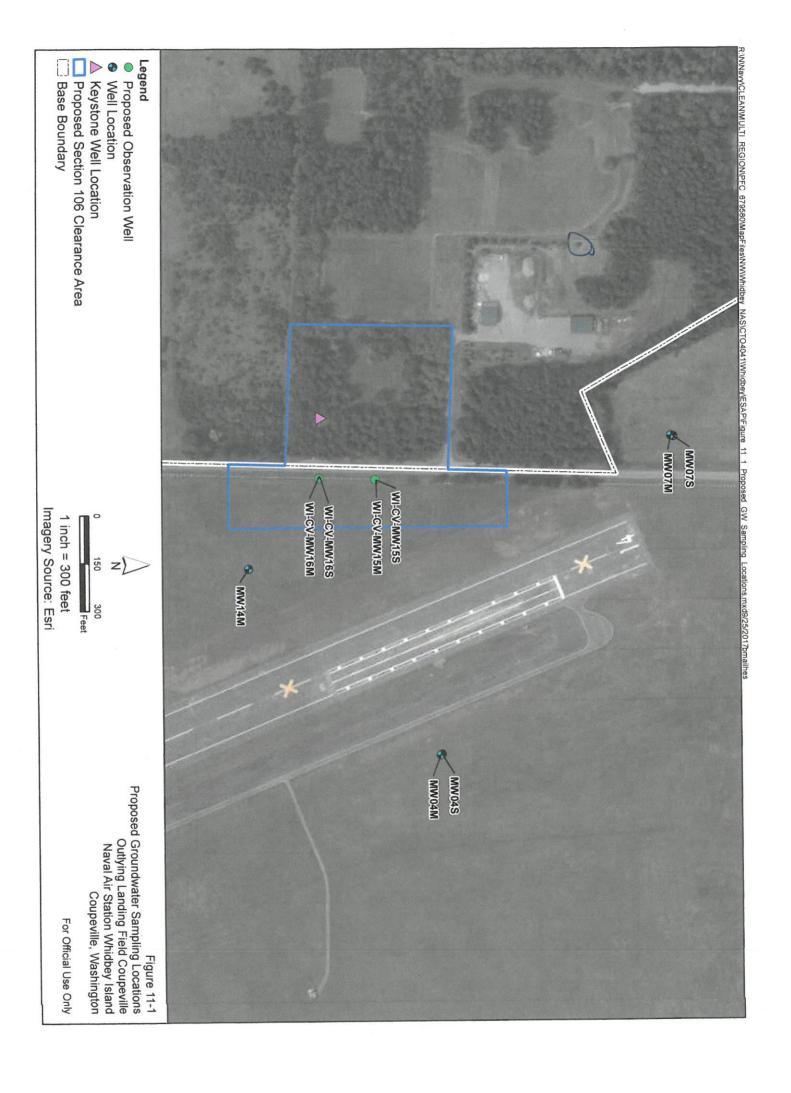
The Town of Coupeville has received the results of the water testing performed by the Navy on Town wells and at entry to distribution. The Navy's test results were very similar to the Town's independent testing. Perfluorooctane sulfonate (PFOS) was not detected in any of the four wells tested or at entry to distribution. Perfluorooctanoic acid (PFOA) was not detected at the three Ft. Casey wells. PFOA was detected at 61 parts per trillion (ppt) at the Keystone well and at 38 ppt at the entry to distribution.

In November, the Town of Coupeville took two water samples from the Keystone well and two samples at the entry to distribution. The Town's results revealed PFOA at 59 and 62 ppt at the Keystone well and 25 and 27 ppt at entry to distribution. The Town blends the water from the three Ft. Casey wells and the Keystone well before it enters the water treatment plant and its distribution system. Where the blended water enters the distribution system is called the entry to distribution. The variance of the Town and Navy's result at entry to distribution is likely due to slightly different pumping levels of the various wells, at the different sampling times.

The uniformity of the results received from two different sampling events, taken by two different samplers and processed at two different laboratories lend credibility to both the Town of Coupeville and the Navy's water test results. All results, at all locations, taken by both the Town and the Navy fall below the EPA's lifetime advisory level of 70 ppt. The lifetime advisory, set by the EPA, establishes a level that is intended to be safe and protective against adverse health effects for individuals consuming water for an entire lifetime. Although the EPA advisory level is not a legal requirement for public water systems, the State Department of Health encourages public water systems to follow the EPA Health Advisory for these compounds.

The Town of Coupeville will continue to work with our Public Health partners in Island County and the State Department of Health to determine what steps, if any, are needed to monitor the water provided by the Town of Coupeville.

The Navy has created a website to keep the public informed of their testing and results. The website is http://go.usa.gov/xkMBc. The Navy continues to test private wells in the vicinity of OLF Coupeville. You can see a map of the area being tested by going to the website, clicking on OLF Fact Sheet at the end of the page, and looking at the area shaded in purple. If you live within the purple Phase 1 area you may schedule water sampling for your residence by leaving a voice mail at 360-396-1030 or by emailing PAO_feedback@navy.mil. We encourage all private well owners in this area to take advantage of the Navy's offer to pay for the testing of your well and get the facts.



NAME STREET ADDRESS CITY STATE ZIP

Dear XX:

SUBJECT: LONG-TERM DRINKING WATER SOLUTION FOR COUPEVILLE RESIDENTS

I am writing to you regarding the U.S. Navy's drinking water investigation near Naval Air Station Whidbey Island's Outlying Landing Field Coupeville. I am pleased to inform you that we have a long-term solution to mitigate exposure to per- and polyfluoroalkyl substances (PFAS) detected in your drinking water well. The Navy has determined that connecting your home to the Town of Coupeville's water distribution system to be the most efficient and protective method of addressing PFAS at your residence. The Navy is also working with the Town of Coupeville to install pretreatment on their system.

The implementation of this action will include the following:

- Obtain all required real estate documentation and permits,
- Add pretreatment to the Town's drinking water system,
- Monitor drinking water to maintain effectiveness of the pretreatment system and ensure the Town's drinking water remains below the EPA's lifetime health advisory,
- Extend the Town's water line to your property,
- Install the water line to your home and disconnect your home from your existing well, and,
- Flush the household piping with the Town's water.

While these actions are occurring, the Navy will continue to provide you with bottled water. We also maintain the offer to install a point-of-use treatment option as an interim solution to address the challenges with bottled water.

I am inviting you to a private meeting to discuss how we reached this decision and the anticipated timeline for implementation. The meeting will be held at:

The Chief Petty Officers' Club Wednesday, January 24, 2018, 5:00pm to 7:00pm 1080 West Ault Field Road Oak Harbor, WA 98277

This is a closed meeting for impacted well owners in Coupeville that are currently receiving bottled water from the Navy to discuss the implementation plan. Representatives from the Navy, Town of Coupeville, Island County Public Health, and Washington State Department of Health will be present to answer your questions pertaining to the long-term solution.

We would sincerely appreciate advance notification of any questions you have on this topic prior to the meeting. Please email all questions to the Navy Public Affairs Officer, Leslie Yuenger at PAO_feedback@navy.mil.

Thank you for your patience as we work to resolve this issue.

Sincerely,

G. C. MOORE Captain, U.S. Navy Commanding Officer Naval Air Station Whidbey Island

CC: Attorney for those who have representation

Agreement to engineer, install and pay for water mains and hook-up fees to connect eight private wells to the Town's water system.

Agreement to engineer, install and pay for the treatment filter for the Town of Coupeville's water treatment plant. Agreement should include long term maintenance of the filters.

Mavy to obtain and possibly pay for easements on private property for the new service lines.

Navy to obtain easements on County property.

Coupeville must update our Water Management Plan with the DOH.

Mavy to obtain approval from DOE, DOH, and Island County of treatment system?

Town need to obtain approval from DOE for water rights?

Town need to amend its water comprehensive plan for the new service lines?

Confirm that all new customers will pay the going rate for out-of-town service. Customer or Navy to pay?

When the new treatment system wears out and the contamination has not been cleaned up, what is the Navy's commitment?

What is the Navy's commitment if the levels of contaminants cannot be effectively treated now or in the future with carbon filter?

Will the Navy cover any new or existing homes that choose to hook-up to Town water?

Agreement to test and monitor the migration of plume and water quality from the Town system. How long?

How and when will the ultimate clean-up happen?

Will Navy financial commitments be conditioned on annual budget appropriations by Congress? Can their commitments transcend over more than one budget year?

Will Navy agree to indemnify the Town from claims made by customers and regulatory agencies?

If the Navy is the project manager for the service line and treatment improvements, will it:

Follow WA State public bid and public works legal requirements in RCW 39.04 and 39.06

Follow consultant procurement requirements in RCW39.80?

Be the lead agency on SEPA and other environmental requirements/

Will an EIS be required?

Secure all required permits from State, County and Town?

Agree to allow the Town to have final review and approval over the design and specifications for the water line and treatment?

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William St.

of sense

Under CTC 13.08.050 it appears thee Town Council will need to approve the method of payment for any extension of the water line outside of Town.

Town Council will need to approve each agreement as it is required.

Will the Navy agree to comply with CTC 13.08.160 – Standard of construction for utilities?

Agreement on how the public will be notified about mitigation and news in the future.

13.08.050 - Cost of extension of water service inside and outside of the Town.

A. The entire cost of the extension of the water system and the upgrading of existing facilities to permit the extension of the system, including both labor and materials, shall be paid by the water user or users to be served by the extension, and all materials installed in such extension from the point of the town's water mains up to and including the individual meter or meters shall be the property of the Town.

Notwithstanding the aforesaid, where existing facilities must be upgraded to permit the extension of the system, the Town may enter into a cost sharing agreement and/or latecomer agreement for the portion of the project cost that is attributable to the required upgrading of the system. The town's share of the cost shall not exceed seventy-five (75) percent of the total value of the project, and the latecomer agreement shall be for a period not to exceed fifteen (15) years. The town's share of the cost of a project may be made in the form of a credit for one or more water hook-up fees for water connections to lots supplied by the water main extension.

B. The Town shall authorize no extension of the water system until the town council has approved the proposed method for the payment of the extension of the water service.

(Ord. 626 § 3 Att. B (part), 2002)

-	oupeville Treatment and Water Connection Information Needed			
-	eatment System			
•	Navy Right of Way with Town for construction			
•	Approval from WA DOH (approve design and work plans)			
•	Approval from Town Council			
•	Approval from Island County Public Health (approve design and work plans)			
•	When do we absolutely need to add treatment to Town's water?			
•	Add treatment to well or in the treatment plant?			
•	When does the Town plan to stop pumping from the other wells in Fort Casey well field?			
•	Size of laydown area for filtration system			
•	Size of vessel and # vessels			
•	Is there enough room to change out media through existing garage door? New building?			
•	What is the Town's timeline for changing out the media in the current plant?			
•	Need cooperative agreement process from contracting for CA with O&M			
•	Is a new source well an option instead of treatment? (Rhododendron Park)			
Wa	Water System Connections			
•	Where is the best place to connect to the existing Town's water line?			
•	Easement from Island County and residences (water lines) - What is the town's process for obtaining easements? Need timeline			
0	Electrical requirements along new pipeline to homes?			
•	Does the Town's plant have the capacity to provide water to other homes along new pipeline?			
•	Can we connect to residences now and provide water?			
Other info /				
•	Can well water be used for crops or do the wells have to be decommissioned?			
	Dand Sapty			

13.08.010 - Water rates.

- A. All customers who are either connected to the town's water system, have a water hookup right, or have a water connection permit shall pay the applicable following water rate and service and reserve capacity charges.
- B. Rates. The monthly rate per cubic foot for water supplied by the municipal water system of the Town shall be as follows:

	In-Town Customer	Out-of-Town Customer
October through May	\$0.0275	\$0.0412
June through September	0.0412	0.0618

C. There shall be a monthly service and reserve capacity charge based on the size of the water meter. These charges are as follows:

Meter Size	In-Town Customer	Out-of-Town Customer
¾— 5/8 inch	\$ 13.33	\$ 20.00
1 inch	22.66	34.00
1.5 inch	44.00	66.01
2 inch	70.65	106.00
3 inch	142.64	214.01
4 inch	222.63	334.03
6 inch	444.34	666.52

- D. Fire Services. The service and reserve capacity charge for fire services (fire hydrants or fire sprinkler systems on private property) shall be based on the number of three-fourths-inch detector meters on backflow prevention assemblies that are either installed, or required to be installed, by the Town as outlined in <u>Section 13.08.140</u> of this chapter.
- E. The service and reserve capacity charges apply to any authorized connection or water hookup right,

13.08.020 - Water hook-up right fees.

A. Water Hook-Up Right Fees. Prospective and existing customers of the Coupeville municipal water system shall pay the Town the hook-up fees as listed below prior to the installation of meters by the Town and prior to the commencement of initial water service or the expansion of existing water service. These fees for a new or increased water hook-up right are for the pro rata share of the cost of the existing water system plus the cost of the capital improvements attributable to increased system capacity to allow the additional hook-up right. Hook-up right fees shall be based on the town's assessment of the customer's water demand in terms of equivalent single-family residential unit (ERU). One ERU is the amount of water assumed in the water system design for the maximum day demand (MDD). The quantity of water for one ERU shall be the amount established in the town's water system plan approved by the Washington Department of Health.

The minimum assessed water MDD per customer is 1 ERU. For multi-family and mixed use premises, the number of ERUs assessed to a customer shall be rounded upward to the nearest ½ ERU.

Customer Classification	Water Hook-up Right Fee
In-Town Customer	\$ 4,500.00 per ERU
Out-of-Town Customer	\$ 9,000.00 per ERU

The Town shall reassess a customer's water demand for a change of property use or expansion of premises. The owner or contract purchaser of property with a change in occupancy or application for building permit shall pay any additional hook-up right fee assessed for expansion of service. The Town shall not give a refund for a reduction in service.

- B. A separate fire service pipe equipped with a "detector meter" for automatic fire sprinklers and/or onsite hydrants shall be exempt from the above hook-up right fees.
- C. Prospective customers shall, at the time of application for service, specify the type and scale of use proposed for the service. Town approval of a hook-up shall be contingent upon the hook-up serving the use specified at the time of application. During the duration of the service, the Town shall have the authority to disapprove changes in use of a service or apply restrictions or conditions to approval of a change of use necessary for proper system operation and protection of public health.
- D. The property to which any water hookup or hookup right pertains, including hookup rights existing on the date of the ordinance codified in this chapter, shall be identified by the property owner in a manner satisfactory to the Town by a single street address, or a single lot number and plat description, or a single Island County tax parcel number.

(Ord. 626 § 3 Att. B (part), 2002)



http://www.chron.com/news/houston-texas/article/Crown-Central-to-pay-for-22-air-pollution-2017604.php

Crown Central to pay for 22 air pollution violations

Company to pay for 22 air pollution violations
Crown Central holds record for largest fine ever levied in state

By Tony Freemantle Published 6:30 am, Thursday, November 8, 2001

State environmental officials approved a \$350,000 fine Wednesday against Crown Central Petroleum Corp. for 22 pollution violations at its Pasadena refinery.

The corporation, which already holds the record for the largest fine ever levied in the state for air pollution, agreed to the fine for repeat violations that occurred between 1995 and 1998, the **Texas Natural Resource Conservation Commission** said.

The TNRCC said Crown did not properly maintain and operate valves and equipment, did not report continuous emissions monitoring data, and discharged into the atmosphere twice the amount of nitrogen oxide allowed by its permit.

The \$350,000 fine agreed to Wednesday brings to a close enforcement action against the company. Other infractions led to a fine of \$1,055,425, which still stands as the largest administrative air pollution penalty ever assessed against a company in Texas.

That penalty was nearly double the previous record of \$576,000 for air pollution.

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"The TNRCC believes Crown's environmental record clearly exhibits a pattern of

serious wrongdoing," the agency said in a statement.

Paul Sarahan, the TNRCC's director of litigation, said Wednesday the agency had been dealing with Crown violations back to 1988. There are no outstanding violations pending against the company, he said.

"We have had serious problems in the past," Sarahan said. "The two penalties are very significant. The additional pieces of the puzzle are now to return the facility to compliance."

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Thomas Owsley, Crown's general counsel and corporate secretary, said the company has implemented all the changes ordered by the TNRCC and that since 1998 its compliance record "has been exemplary."

Rick Abraham, the executive director of the environmental group Texans United who, along with other environmentalists, filed a citizen's lawsuit against Crown in 1997, said that although the company's record had improved, it committed several more violations after 1998.

Abraham said his organization, along with Trial Lawyers for Public Justice, the Sierra Club, the Natural Resource Defense Council and people who live near the refinery, filed suit against Crown because they believed the TNRCC was not going after the company with enough vigor. The federal Clean Air Act allows citizens to sue polluters when state regulators fail to enforce environmental regulations.

Crown agreed to settle the suit for \$1.6 million last February. The majority of that money went to pay the TNRCC fine, some went to settle federal enforcement actions and \$100,000 was paid to the Harris County Pollution Control Department for air monitoring and sampling.



Galveston Daily News "Rick Abraham"

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The Galveston Daily News from Galveston, Texas on April 27, 1989 ...

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Apr 27, 1989 - The Galveston Daily News (Galveston, Texas), Thursday, April 27, 1989, Page 16. ... Sunil Kumar Raiput, 17, Chander Singh, Satinath Sarangi and Rick Abraham, director of Texas United, : were arrested before 10 a.m. after they refused to put down a banner, signs and flyers before entering the hotel lobby, ...

The Galveston Daily News from Galveston, Texas on September 2 ... https://www.newspapers.com/newspage/13691825/ ▼

Sep 2, 1993 - The **Galveston Daily News** (**Galveston**, Texas), Thursday, September 2, 1993, Page 11. ... While hailed by Richards, the new agency drew "serious concerns" from **Rick Abraham** of Texans United. The environmental group has opposed some permits granted by the state to businesses. "Our major concern is ...

The Galveston Daily News from Galveston, Texas on February 22 ... https://www.newspacers.com/newspace/36370838/ >

Feb 22, 1994 - The Galveston Daily News from Galveston, Texas Edition date and page: Tuesday, February 22, 1994, Page 9.

The Galveston Daily News from Galveston, Texas on February 6, 1999 ... https://www.newspapers.com/newspage/14012870/ ▼

Feb 6, 1999 - The **Galveston Daily News** from **Galveston**, Texas Edition date and page: Saturday, February 6, 1999, Page 1.

The Galveston Daily News from Galveston, Texas on October 1, 1991 ... https://www.newspapers.com/newspage/17134595/ ▼

Oct 1, 1991 - The Galveston Daily News from Galveston, Texas Edition date and page: Tuesday, October 1, 1991, Page 9. ... Pollution in Texas has killed people, has destroyed families and communities," said Rick Abraham, executive director of Texans United. Lawmakers earlier approved a four-month moratorium on ...

The Galveston Daily News from Galveston, Texas on March 29, 1995 ... https://www.newspapers.com/newspage/16850793/

Mar 29, 1995 - The Galveston Daily News (Galveston, Texas), Wednesday, March 29, 1995, Page 10. ... public relations problem, which they tried to fix with rhetoric and slick public relations programs," said Rick Abraham, director of Texans United, a nonprofit environmental organization that assists polluted communities.

The Galveston Daily News from Galveston, Texas on November 20 ... https://www.newspapers.com/newspage/11507161/ ▼

Nov 20, 1987 - Publication: The **Galveston Daily News** i; Location: **Galveston**, Texas; Issue Date: Friday, November 20, 1987; Page: Page 1 **Rick Abraham**, southern regional organizer for the National Campaign Against Toxic Hazards based in Boston, and Fred Millar, director of the Toxic Chemicals Safety and Health ...

The Galveston Daily News from Galveston, Texas on May 5, 1989 ... https://www.newspapers.com/newspage/13395468/ ▼

May 5, 1989 - The **Galveston Daily News** (**Galveston**, Texas), Friday, May 5, 1989, Page 7. ... Arrested along with the surviv- ers of the Bhopal disgrace was **Rick Abraham** of Texans United, an environmental organization whose office is in Houston. Union Carbide knew that these people were there, yet they made no ...

The Galveston Daily News from Galveston, Texas on December 3 ... https://www.newspapers.com/newspage/11528898/ ▼

Dec 3, 1987 - Thursday, December 3, 1987 LVESTON DAILY NEWS 3-A State surety board allows AIDS testing requirement AUSTIN (AP) - The State Board of ... Fred Millar of the Environmental Policy Institute in Washington, D.C., and Rick Abraham of the National Campaign Against Toxic Hazards in Austin, are two of ...

Galveston Daily News Newspaper Archives, Mar 16, 1996, p. 11

https://newspaperarchive.com/galveston-daily-news-mar-16-1996-p-11/

Galveston Daily News (Newspaper) - March 16, 1996, Galveston, Texas GALVESTON COUNTY TEXAS SATURDAY MARCH 16 1996 11A BUSINESS ... has poured processed wastewater into the Houston Ship Channel from 1989 to 1995 The problem is with said Rick Abraham spokesman for Texans United Exxon is ...

practices and are trying to help the working class who live up against their fences," Rick Abraham, a Texans United spokesman. "The type (of community) a large company likes to write off."

He said he suspects Exxon was unhappy with his group because he had been openly critical of the company's toxic emissions, protested the disastrous Alaska oil spill in front of the plant on Earth Day and obtained a sample of discharge water leaving the plant site, which was proved to contain 38 percent petroleum products.

Embry said Abraham had been "irresponsible" for hanging a huge protest sign on the company's main gate and twice trespassing on company property.

"We want to work with our neighbors," he said.

Houston Chronicle, Sunday June 25, 1989.

Later in the summer of 1989, Fulton concluded that Abraham was not working with him in good faith and warned BayCap that Exxon would only work with BayCap if Abraham was not involved. BayCap would not agree to that term, and its meetings with Exxon ended.

Soon thereafter, Abraham brought a slander suit against Fulton, Embry and Exxon. Exxon, Abraham alleged, was liable under the doctrine of *respondeat superior*.

During the next nine years, in which the parties engaged in extensive pre-trial discovery, Abraham repeatedly amended his petition, each time adding either new factual allegations or causes of action concerning an increasing array of alleged statements by Fulton, Embry, and other unnamed Exxon employees about Abraham.

After a first trial in 1994 ended in a mistrial, the parties were called to trial in April 1998. Before the jury returned with a verdict, the trial court granted Exxon's Motion for Partial Summary Judgment, which held portions of Abraham's defamation and intentional infliction of emotional distress claims were barred by limitations. The jury returned a verdict finding Fulton and Embry did not defame Abraham. The trial court rendered judgment on this jury verdict that Abraham take nothing by his claims against Fulton, Embry, and Exxon.

ANALYSIS

Legal questions – what are the next steps?

Our Town attorney feels it would be a good idea to write a Letter of Understanding between the Town and the Navy that spells out some of the key points of what will be happening in the next year. Nothing too formal or detailed at this point. I would like to take this step so I have more formal approval from my Council to continue negotiating and making commitments on the Town's behalf.

We think this letter or memorandum of understanding would be separate from a maintenance and operation agreement that will be needed closer to the end of the construction stage.

If you think it would be a good idea to get our attorneys in the same room to talk about this, or any other matter involved with this huge undertaking, our attorney, Grant Weed, could be available to meet in Coupeville on February 12, 13 or 15.

Key Points

- The Navy, will be designing and constructing a filter system for the Town of Coupeville's water treatment plant to treat for PFOA and PFOS.
- The Navy, will be designing and constructing new service lines and private lines to connect the owners of eight private wells (10 homes?) to the Town of Coupeville's water system.
- The Navy will design a water filter system that may be adapted or changed if federal or state regulations change regarding PFAS. Any future adaptions required by federal or state regulations will be at the expense of the Navy.
- The Navy agrees to consult with the Town of Coupeville's Utility Superintendent, Public Works Superintendent and the Town Engineer on these projects.
- The Navy will be the lead agency for all environmental review for both projects.
- The Navy will be the lead agency for all necessary permits for both projects.
- The Navy will be responsible for conducting any pilot studies that may be required.
- The Navy will be responsible for obtaining all necessary approvals from the Department of Health and Island County for both projects.
- The Navy or its contractor will reimburse the Town of Coupeville for any out of pocket expenses incurred for both projects.

Other considerations/questions from our Town Attorney

Coupeville Town Code 13.08.050 requires the Town Council to approve the method of payment for any extension of the water line outside of the Town limits.

What will the Navy do if the levels of contaminates cannot be effectively treated now in in the future?

What will the Navy do when these improvements to the Town's capital improvements wear out or need replacement? What is the long term plan?

If any of the properties served by private, contaminated wells can be subdivided, will the Navy pay for new connections?

What will be the long term plan for testing and monitoring the Town's water and the migrations of the plumes?

Will the Navy's financial commitments be conditioned on annual budget appropriations? How long can the M & O agreement run, more than one or two budget years?

Will the Navy agree to indemnify the Town from claims made by customers and/or regulatory agencies resulting from contaminates?

Will the Navy agree to comply with Coupeville Town Code 13.08.160 requiring the installation of new water mains, services and meter settings will be in accordance with Town standards for construction?

PFAS Coupeville Private Resident Meeting Questions & Answers January 29, 2018

Question 1: How did the Navy choose this long-term solution option over new wells or individual filters for private wells?

Answer 1a: Treatment of the Town of Coupeville's drinking water system is the most protective and efficient method of addressing PFAS contamination to impacted private wells with minimal disturbance to the home owners and also protects the Town's water. The following are reasons why this is the most protective solution for homes in Coupeville.

- Adaptable The system will be designed to be adaptable to address changes in regulatory status.
 For example, if new PFAS regulations or applicable advisory levels are established, the Navy will be able to adjust the treatment system, as necessary. PFAS concentration and distribution within the aquifer is not yet fully defined. Subsequent investigations will focus on resolving these unknowns. While this investigative process is underway, the Navy's priority will be to reduce any identified exposure.
- By connecting your home to the Town's water distribution system, changes in the PFAS
 contamination level in the aquifer can be managed at the treatment plant and will not require
 further access or coordination access to your property.
- Extending the Town's water service lines to your neighborhood will ensure that any other private
 wells testing positive for PFAS compounds above applicable regulations or advisories in the
 future can be connected to the Town's treated water system.

Answer 1b: Due to the local hydrogeology and migration of PFAS into the drinking water aquifer, installing new wells on your property will not provide your home a source of water below the PFOS/PFOA lifetime health advisory.

Answer 1c: Placing individual filters on each home would require reoccurring and frequent visits to your home to sample your water and replace the filters for the foreseeable future.

Question 2: What will the Navy pay for? I don't pay for my water now. Do I have to pay the monthly water fee?

Answer 2: The Navy will pay all installation costs, including the water line and meter set up fees. The Navy's Environmental Restoration program is not authorized to pay for recurring water fees. The homeowners will pay monthly water usage fees.

Question 3: How long will it take to connect the homes to the Town's water system?

Answer 3: Absent of any unforeseen circumstances, we estimate the design, construction, and verification of the water distribution lines and the modifications to the Town's treatment plant will take up to 1.5 years.

This work includes the following:

- Obtain all required real estate documentation and permits.
- Obtain approval for the modifications to the Town's water treatment system from the State of Washington Department of Health
- Extend the Town's water line to your property
- Install the water line to your home and disconnect your home from your existing well
- Flush your home's piping with the Town's water
- Ensure the water in your home is below the EPA's lifetime health advisory for PFOS and PFOA. In the meantime, the Navy will continue to provide you with bottled water. We will also continue to offer you the point-of-use option (i.e., filter under your kitchen sink) to mitigate the challenges you may be experiencing with bottled water prior to connecting you to the Town's water system.

Question 4: What type of new treatment are you installing at the Town's drinking water treatment plant?

Answer 4: We are still evaluating the optimal treatment media and configuration. It will likely be a granular activated carbon (GAC) media system.

Question 5: If you're installing a filter to the Town's system, why not at my well head? Answer 5: See Answer 1b-c above.

Question 6: Is it possible to connect our homes prior to the new treatment system being installed at the Town's drinking water treatment plant?

Answer 6: We are evaluating this option. We are designing the Town's PFAS treatment system and water line distribution system concurrently. The capability to connect your home prior to completing the treatment system installation is dependent on this timeline.

Question 7: What will you do to my well and property?

Answer 7a: We will first need to obtain a real estate agreement with you that will grant the Navy temporary access to your property to:

- Install a water line and water meter on your property and disconnect your home from your existing well.
- Sample the water in your home to ensure it's detected below the EPA's lifetime health advisory for PFOS and PFOA.
- If you would like your well taken out of service (i.e., decommissioned), the Navy will do so at no cost to you.

Answer 7b: We would like to use your well for periodic monitoring to monitor the movement of the plume and potential impact to other water sources nearby. We will obtain a separate real estate agreement with you to conduct this monitoring.

Question 8: This installation will dig up my flower beds/landscape, will you fix this?

Answer 8: Yes. We intend to restore your yard to the condition it was in prior to work being performed.

Question 9: If I don't want to hook up to the Town's water, will you continue to provide me with bottled water and for how long?

Answer 9:

The Navy implemented the response action of bottled water immediately after identifying wells with drinking water concentrations of PFOA/PFOA above the EPA lifetime health advisory. The will continued to provide bottled water until the more protective and permanent drinking water solution is implemented. For those residents who decline to participate in the long term solution, the Navy will maintain the original response action, bottled water until a remedial action decision is made under the CERCLA process. This process can take up to several years depending on complexity.

Question 10: What is the timeline for point-of-use filter installation, verification, and use? Answer 10: The Navy plans to install these filters between March and April 2018 and plans to sample the water to verify the point-of-use filtration system's performance over a 12-week period. The Navy estimates that the filtration system will be functional by May 2018. The Navy will provide bottled water until we verify the system is performing effectively.

Question 11: Who will construct and manage the Town of Coupeville's drinking water treatment system? Answer 11: The Navy will construct the system in coordination with the Town of Coupeville, Island County Public Health, and Washington Department of Health. The Navy will fund operation and maintenance of the system. The Navy and Town of Coupeville will develop a mutual agreement for future maintenance.

Question 12: What are the criteria to hook up other users?

Answer 12: If drinking water sampled by the Navy is found to exceed the EPA's lifetime health advisory at other households, we will immediately provide those residents with bottled water until they can be connected to the Town's water system.

Question 13: Will the Navy hookup residents that do not have drinking water over the EPA's lifetime health advisory?

Answer 13: See the response to Question 12, above. The Navy will make decisions on a case by case basis based on the current regulations, groundwater plume information, and residents' drinking water PFOA/PFOS results.

Question 14: Who is responsible for the PFAS contamination?

Answer 14: Contamination can happen under many different circumstances through a variety of sources. The Navy is being proactive and taking action to address contaminants as they are discovered and to investigate PFAS concentration and distribution within the aquifer, as this is not yet fully defined. The Navy's first priority is to ensure that drinking water remains safe.

Question 15: Is the water system going to be designed for population growth? Answer 15: Yes. Population growth is being considered in the treatment system and water distribution design.

Question 16: Will we be compensated for our drinking water well installation, septic system construction, and water filtration unit sunken costs?

Answer 16: The Navy's Environmental Restoration program is not authorized to pay for previous construction costs, including your drinking water well. Any claims will need to be adjudicated through the appropriate Government claims process.

Question 17: What additional investigation is going on at OLF Coupeville?

Answer 17: In December 2018, the Navy installed four new monitoring wells and conducted a groundwater test on OLF. We collected groundwater levels and samples from the new wells and other wells on base in order to gather information regarding the impact of pumping rate at the Keystone Hill well (Town's primary water source well) on groundwater flow directions and relative PFAS concentration.

Question 18: Why are no representatives from the engineering company CH2M slated to attend this meeting? The bulk of our questions are for them.

Answer 18: The Navy's project manager will be present at the meeting to answer questions about the treatment system design. We are very early in the design planning process, and may not have all the answers to your questions on the design at this time. We will follow-up with additional information as it becomes available and is approved by the Department of Health and will have appropriate experts available when the design is complete.

P

Question 19: Will the proposed filtration be designed for PFOA, PFHxA and specifically PFHxS which has the longest half-life in (8.5 years) in the body? It is the predominant contaminant in the Coupeville tap water.

Answer 19: The Town of Coupeville's drinking water treatment system design will ensure PFOA and PFOS remain below the lifetime health advisory. If other applicable advisory limits or regulations are established for PFAS compounds, then Navy will adjust the treatment design as necessary to maintain protectiveness and follow applicable standards.

Question 20: Is there compensation for residents who had long exposure to PFAS documented by blood testing and with toxic loads, who have since moved?

Answer 20: The Navy's Environmental Restoration program is not authorized to pay for blood testing and other medical costs associated with potential exposure to PFAS. Any claims will need to be adjudicated through the appropriate Government claims process.

Question 21: The OLF sits on top of Smith Prairie's unprotected aquifer. There can be NO further storage or use of fluorine based AFFF at the OLF. There are alternative biodegradable foams. Also, in the event of a crash, will there be immediate excavation of the crash site to avoid contamination with PFAS in the hydraulic fluid?

Answer 21: The Navy no longer uses AFFF in firefighting training exercises. The Navy's goal is to minimize any potential impacts where AFFF may be used in emergency situations. In the event AFFF is used to extinguish a fire, the foam will be cleaned up to the extent practical after the fire is out and it is safe to access the site.

Question 22: How frequently will Coupeville's water be tested using the 14 PFAS testing and level limits? We will need to be privy to these results.

Answer 22: The Navy plans to sample the Town's water at least twice a year. We are developing the periodic monitoring plan at this time, which includes the frequency of resampling drinking water wells. The Navy will provide the drinking water results to the Town and the Town will make the decision whether to provide the results to their customers.

Question 23: If your filtration is inadequate to remove PFHxS, will additional reverse-osmosis filters be incorporated?

Answer 23: The Town of Coupeville's drinking water treatment system design will ensure PFOA and PFOS remain below the lifetime health advisory. If other applicable advisory limits or regulations are established for PFAS compounds, then Navy will adjust the treatment design as necessary to maintain protectiveness and follow applicable standards.

Question 24: Will CH2M be project manager for both design and construction? Answer 24: The Navy will manage both projects and oversee CH2M's work.

Question 25: How will well owners be involved in design ideas, oversight and impact to their property for new water lines?

Answer 25: The residents will be involved selecting the location for the new water line on their property. The Navy will obtain a real estate agreement with each property owner to install the water line.

Question 26: Who will be in charge of updates, communication and problem solving? Navy, Coupeville Water, subcontractors

Answer 26: The Navy will work with the Town of Coupeville's leadership to ensure communication about the project.

Question 27: How soon will preliminary plans be available for review by homeowners? Answer 27: The Town's water treatment system's design will be reviewed by the Navy, EPA, Island County Public Health, and the Department of Health at several points during development. The residents will be involved selecting the location for the new water line on their property. The Navy will obtain a real estate agreement with each property owner to install the water line.

Question 28: Will the Navy be paying for road or easements?

Answer 28: The Navy will pay for necessary agreements, such as leases or easements, which may be required to complete the construction.

Question 29: Would the Navy please consider a series of future reviews (similar to tonight) to update

impacted property owners and disseminate data? Answer 29: Yes, we will consider that.

Question 30: Will the new water line only supply the home or will it tie into existing water system which supplies other water faucets on the property?

døsent answer grussen

Answer 30: All of your home's water will come from the Town of Coupeville's treated water system.

5

New Found PFAS Contamination of Coupeville's Water Unanswered Questions About Navy Filtration Plans

The Navy's agreement to pay for filtering Coupeville's water to lower its PFAS contamination is welcome and long overdue. However, the Navy is only partially addressing a problem it has caused.

It's been more than a year since perfluoroalkyl substances (PFASs) leaking from the Navy's Outlying Field (OLF) were found in the Town's water. Neither the Town nor Navy will say when a filter system will be installed. It could be a year or more according to Island County's point person with the Navy. Until then, Coupeville homes, schools and the hospital will continue to receive water containing PFASs that exceed the health guidelines of several states.

Even after the yet-to-be-designed filter is installed, the Navy acknowledges that PFASs will not be entirely removed. When asked for details of the planned filtration, such as reduction goals and monitoring details, the Navy replied in January 25 email that it was "exploring options" and "has no specifics to share."

The Town's glowing praises of the Navy's plans came a week after the Town received test results showing PFAS contamination of its Fort Casey wells a mile from the OLF, in addition to the Keystone well located next to the OLF. This means both of Coupeville's well fields have PFAS contamination—something the Town and Navy did not mention in their statements to the news media.

In addition to PFOA and PFBS, the Navy found PFHxS, PFHxA and PFHpA in the Fort Casey wells and Keystone wells. These chemicals have been found in the aquifer beneath the OLF, in private wells near the OLF, and in Coupeville's tap water. Prior to October 2017, the Navy had not even looked for these chemicals in public and private wells even though they had been found at the OLF.

PFHxS has often turned up at levels higher than PFOA and stays in the body longer than PFOA. EPA says it doesn't have enough information to set health guidance levels for PFHxS, but studies have linked it to childhood developmental problems.

It's fair to ask if the continued use of the Keystone well that draws from a contaminated aquifer is the best option, or simply the cheaper one for the Navy. Coupeville had planned to drill a new supply well in 2020 and considered ending its use of the contaminated Keystone well. The Town inquired about state funding "to acquire land and drill a new well and add transmission lines." Coupeville's Mayor had also asked Island County if it might sell the Town land for an easement and a new well.

The decision against drilling of a new well in an uncontaminated area has not been explained. It is clear that both the Town and the Navy wanted PFASs out of the

news. Both have withheld information from the public about the extent of the contamination--by use of detection and reporting limits that would allow PFASs to go undetected in water samples--and by withholding the results of testing that did find PFASs.

For example, Coupeville knew from its own testing that PFHxS, PFHxA, PFHpA were in the Town's water for almost a year before telling its water customers. The Mayor claimed that the Town's water was not "technically" contaminated, and she characterized legitimate expressions of concern about health impacts as "fear mongering."

Although praised for being transparent, the Navy still refuses to release the results of its October 2017 testing of Coupeville's water to the general public--even though Coupeville's water is used by public schools and the hospital. The expanded testing of October 2017 followed citizen complaints to the Secretary of the Navy alleging a flawed investigation that was failing to identify all the PFASs in the community's water.

The October 2017 results for the Fort Casey wells are preliminary and the PFAS amounts are low and estimated. Still, the unprotected Fort Casey wells and private wells are in the path of groundwater flow from the OLF where the highest levels of PFASs in central Whidbey's aquifer have been found. The test results point to a spreading plume of contamination larger than what has been represented.

A filter system may or may not be the best option, but filtering of Coupeville's water will do nothing to remove the PFASs in the aquifer that are migrating beyond the OLF's boundaries.

If there is cause to celebrate the Navy's decision, it should be when something is being done and not just planned. It should be when there is on-going monitoring for PFASs, including PFHxS, PFHxA, and PFHpA. It should be when people no longer have to wait to drink uncontaminated water.

Rick Abraham January 30, 2018

Molly Hughes

From:

Leibman, Kendra R CIV NAVFAC NW, EV32 < kendra.leibman@navy.mil>

Sent:

Wednesday, January 31, 2018 12:49 PM

To:

Molly Hughes

Cc:

Joe Grogan

Subject:

FOUO- Coupeville Impacted Parcels

Attachments:

FOUO Coupeville Impacted Parcels.pdf

Hi Molly,

Attached is a map showing the impacted parcels.

The names and addresses are shown below.

Cliff & Kristine Fellrath 15148 State Route 20

James Heidinger

310 Big Cedar Lane

Keith & Jan Hovland

15207 State Route 20

Gary & Jane Johnsen

15218 State Route 20

Mark & Kristi Korzan

294 Big Cedar Lane

Mike & Pat Millenbach 1023 Keystone Hill Rd

Steve & Sandra Swanson

15203 State Route 20

Oscar Bececca (home owner)

shares well w/Johnsen

David & Melanie Hovland

shares well w/Swansons

Andrew & Jennifer Crawford

258 Big Cedar Lane

I look forward to meeting with you on Friday.

Kendra

Kendra Leibman, P.E. Remedial Project Manager

NAVFAC NW 1101 Tautog Circle, Suite 203 Silverdale, WA 98315-1101

- (O) 360-396-0022
- (C) 509-999-6843
- (F) 360-396-0857

kendra.leibman@navy.mil



Coupeville Water Project Planning

PROJECT:

Coupeville-Navy Water Improvements/695610.08.CE.GN

MEETING TIME:

February 2, 2018, 10:00 AM

LOCATION:

Island County Courthouse - Law and Justice Building, 101 NE 6th Street, Room 131,

Coupeville, WA 98239

Objective

Discuss and document consensus on project requirements and approach.

Agenda Items

- 1. Introductions, Meeting Agenda Overview, Other Discussion Items
- 2. Health and Safety Moment
- 3. Meeting Specific Agenda Items
 - a. Background
 - In-Town Wells salt water intrusion and manganese issues
 - Fort Casey Wells and Water Treatment Plant aeration/oxidation, manganese dioxide filtration/adsorption, and disinfection address iron, manganese, and hydrogen sulfide issues
 - Fort Casey Keystone Well 1-08 PFAS detected at concentrations just below USEPA 70 ppt Health Advisory level
 - Private Residential Well Supplies adjacent to Fort Casey Wellfield PFAS detected at concentrations above USEPA Health Advisory levels
 - b. Project Needs and Approach
 - Additional Treatment Add processes to Fort Casey Water Treatment Plant to remove/reduce PFAS in water supply
 - Extend Water System Extend piping and make other improvements needed to provide water utility service to affected private residences
 - c. Alternative Assessment Requirements
 - Potentially Viable Technologies granular activated carbon (GAC) adsoption/filtration, ion exchange (IX) resins, nano/RO membranes
 - Considerations treatment performance and future regulations, waste handling/disposal, operational complexity, piloting requirements, implementation schedule, cost/benefit
 - Pilot Testing GAC rapid small scale column tests (RSSCT), onsite pilot, full scale pilot
 - d. Project Schedule Priorities and Streamlining Opportunities
 - e. Project Approach Consensus and Issues
- 4. Action Items and Follow-up Activities



Coupeville Water Project Planning

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MEETING TIME:

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DEPARTMENT OF THE NAVYNAVY REGION NORTHWEST

NAVY REGION NORTHWEST 1100 HUNLEY ROAD SILVERDALE, WA 98315-1100

> 5090 Ser N45/0925 November 28, 2017

The Honorable Molly Hughes Mayor of Coupeville PO Box 725 4 NE Seventh Street Coupeville, WA 98239

Dear Mayor Hughes:

Thank you for your continued support as we work to address per- and polyfluoroalkyl substances (PFAS) in drinking and groundwater on and near Naval Air Station Whidbey Island Outlying Landing Field (OLF) in Coupeville, Washington. As you are aware, the Navy has identified eight drinking water wells (ten residences) near OLF Coupeville that exceed the U.S. Environmental Protection Agency's lifetime health advisory limit for perfluorooctane sulfonate and perfluorooctanoic acid (PFOA). The Navy will continue to provide bottled water to affected residents as an interim solution, while we evaluate long-term solutions.

I am pleased to inform you that we have been authorized to add pretreatment to Coupeville's water distribution system as a means to address PFAS in drinking water and protect public health. My technical team continues to evaluate this option and will be in contact with you shortly to discuss the details.

My technical team also continues to evaluate your concerns regarding another solution that connects impacted residences to the Coupeville water distribution system. Specifically, your concern of the long-term sustainability of Coupeville's water supply due to the PFOA concentration in your primary source well - Well 108.

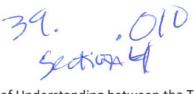
If you have questions or concerns, please contact Captain Geoffrey Moore, Commanding Officer, Naval Air Station Whidbey Island at (360) 257-2037 or by e-mail at geoffrey.moore@navy.mil.

G. A. MAYES

Sincere

Rear Admiral, U.S. Navy

Commander, Navy Region Northwest



Legal questions - what are the next steps?

Our Town attorney feels it would be a good idea to write a Letter of Understanding between the Town and the Navy that spells out some of the key points of what will be happening in the next year. Nothing too formal or detailed at this point. I would like to take this step so I have more formal approval from my Council to continue negotiating and making commitments on the Town's behalf.

We think this letter or memorandum of understanding would be separate from a maintenance and operation agreement that will be needed closer to the end of the construction stage.

If you think it would be a good idea to get our attorneys in the same room to talk about this, or any other matter involved with this huge undertaking, our attorney, Grant Weed, could be available to meet in Coupeville on February 12, 13 or 15.

Key Points

- The Navy, will be designing and constructing a filter system for the Town of Coupeville's water treatment plant to treat for PFOA and PFOS.
- The Navy, will be designing and constructing new service lines and private lines to connect the owners of eight private wells (10 homes?) to the Town of Coupeville's water system.
- The Navy will design a water filter system that may be adapted or changed if federal or state regulations change regarding PFAS. Any future adaptions required by federal or state regulations will be at the expense of the Navy.
 - The Navy agrees to consult with the Town of Coupeville's Utility Superintendent, Public Works Superintendent and the Town Engineer on these projects.
- The Navy will be the lead agency for all environmental review for both projects.
- The Navy will be the lead agency for all necessary permits for both projects.
 - The Navy will be responsible for conducting any pilot studies that may be required.
- The Navy will be responsible for obtaining all necessary approvals from the Department of Health and Island County for both projects.

The Navy or its contractor will reimburse the Town of Coupeville for any out of pocket expenses incurred for both projects.

Navy-not public works project neline used as exhibit for

Bilatere - both parties Unilateral - Navy way

Other considerations/questions from our Town Attorney

Coupeville Town Code 13.08.050 requires the Town Council to approve the method of payment for any extension of the water line outside of the Town limits.

What will the Navy do if the levels of contaminates cannot be effectively treated now in in the future?

What will the Navy do when these improvements to the Town's capital improvements wear out or need replacement? What is the long term plan?

If any of the properties served by private, contaminated wells can be subdivided, will the Navy pay for new connections?

What will be the long term plan for testing and monitoring the Town's water and the migrations of the plumes?

Will the Navy's financial commitments be conditioned on annual budget appropriations? How long can the M & O agreement run, more than one or two budget years?

Will the Navy agree to indemnify the Town from claims made by customers and/or regulatory agencies resulting from contaminates?

Will the Navy agree to comply with Coupeville Town Code 13.08.160 requiring the installation of new water mains, services and meter settings will be in accordance with Town standards for construction?

For official use only (FOUO) - please do not forward

Meeting Agenda

PREPARED BY:

Kendra Leibman

MEETING DATE:

February 12, 2018

MEETING TIME:

LOCATION:

Teleconference (1-877-939-1153; Access code: 9774245)

PARTICIPANTS:

Town of Coupeville Mayor Molly Hughes

Town's Attorney, Mr. Grant Weed

Navy's Lead Attorney, Ms. Mary McKnight- Collectate

Navy's Environmental Attorney, Mr. Tom Puckett

Navy's Environmental Restoration Program (ERP) Manager, Ms. Dina Ginn

Navy's ERP Supervisor, Mr. Chris Generous

Navy's Remedial Project Manager, Ms. Kendra Leibman

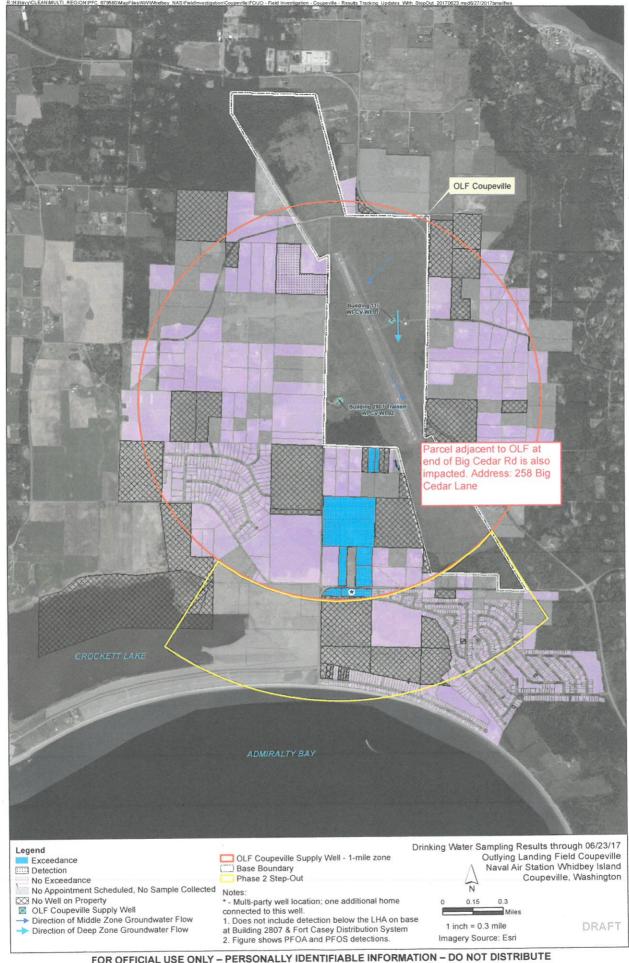
Objectives

There are three objectives for this meeting.

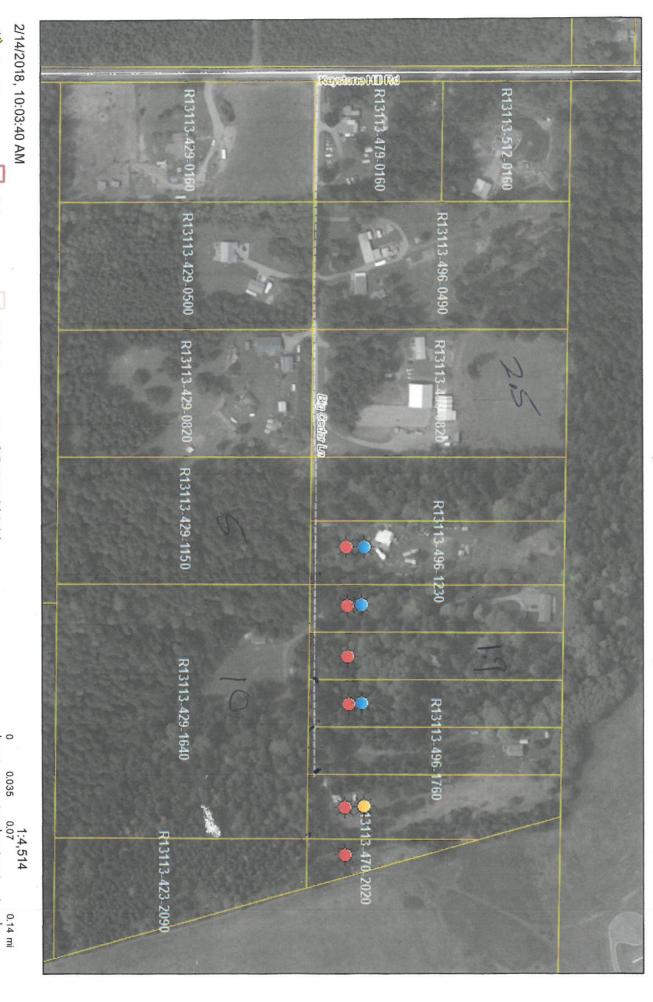
- Discuss and agree upon path forward for information dissemination (e.g. primarily email) between the Town, Navy, and Navy's contractor, CH2M, regarding the long-term solution to PFAS in drinking water for the Town of Coupeville.
- Discuss and agree upon the appropriate document (e.g., letter) that summarizes the Navy's intent to add treatment to the Town's drinking water treatment plant and connect 10 impacted homes to the Town's water system.
- Discuss and agree upon the short-term plan to pay the Town for incidental costs associated with permits and real estate agreements and long-term plan to pay the Town for operation and maintenance of new PFAS treatment.

Agenda Items

- 1) Information dissemination (examples of information below)
 - Design information (water distribution lines and treatment plant)
 - Construction information (water distribution lines and treatment plant)
 - Residents name and addresses with PFAS exceedances (those that will need to be connected to the Town's water system)
 - Real estate documents (Town's Franchise agreements with Island County and Washington Department of Transportation)
 - **Permits**
- 2) Letter of Intent
- 3) Short-term and long-term costs
 - Permits and real estate agreement costs
 - Operation and maintenance costs
 - Cooperative Agreement (renewed every 2years)
- 4) Other items



Island County Parcel Viewer Map



Plats

Condo

One Way Directions Tideland Only Parcels

No Adjacent Land Roads

City Limits
Quarter Sections

Parcels

Highway

Private

Island County
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

0.0425 0.085

DO NOT USE AS A LEGAL DOCUMENT, ACCURACY NOT GUARANTEED

Collector and Arterial

Road Closures

Plat

Island County Parcel Viewer Map



DO NOT USE AS A LEGAL DOCUMENT, ACCURACY NOT GUARANTEEN

Meeting Agenda

Date: March 26, 2018

Location: Island County Administrative Building, 1 NE 7th Street, Room 116, Coupeville, WA

98239

Subject: Town of Coupeville Long-Term Solution: Access Agreement for Big Cedar Lane, Fire

Flow Requirements, and Treatment Analysis/GAC Planning Elements

Participants: Town of Coupeville (Mayor Molly Hughes, Joe Grogan, Kelly Riepma, Kim Hinds), Island County Public Health (Jill Wood, Keith Higman), US Navy (Dina Ginn & Kendra Leibman), CH2M/Jacobs (Rebecca Maco, Matt Maring, Jennifer Madsen)



Fire flow requirements:

- Hydraulic modeling analysis approach and results
- Minimum system improvements required for domestic service
 - Additional system improvements required for fire flow delivery
- Additional fire flow supply for reliability/redundancy (necessary?)



Big Cedar Lane access agreement:

- Easement/right-of-way with private property owners
- Water main routing, construction, and maintenance requirements
- Water main termination requirements
- 3) Treatment analysis and GAC planning:
 - Alternatives analysis update anticipated performance and options, piloting and operations complexity, waste stream management, process flexibility, lifecycle costs and cost/benefit
 - Pilot test- Rapid Small Scale Column Test approaches
 - Equipment procurement
 - Project predesign report update
 - Site investigations survey and utility locates, geotech, wetlands, historic/cultural
 - Detailed design development
 - WTP process siting options
 - Permit requirements

don Excluse

Molly Hughes

From:

Leibman, Kendra R CIV NAVFAC NW, EV32 <kendra.leibman@navy.mil>

Sent:

Tuesday, March 27, 2018 12:57 PM

To:

Jill Wood; 'Keith Higman'; Molly Hughes; Kelly Riepma; Kim Hinds; Joe Grogan; Ginn,

Dina R CIV NAVFAC NW, EV3; Generous, Christopher CIV NAVFAC NW, EV32; 'Maco,

Rebecca/SEA'; Maring, Matt/SEA

Cc:

Madsen, Jennifer/SEA

Subject:

RE: Town of Coupeville Long-Term Solution: Access Agreement for Big Cedar Lane &

Fire Flow Requirements

Good afternoon,

Thank you for attending the meeting yesterday. It was very helpful and we made good progress.

Below are the action items I captured from our meeting. Please review and let me know if I missed anything.

- 1) Navy action: Contact Derek Pell at DOH to check on requirement for fire flow redundancy at the time of construction or if it can be deferred to later.
- 2) Navy action: Contact Central Whidbey Island FD to check in a turnaround is required for fire response on Big Cedar Lane
- 3) Navy action: Check with Navy Real Estate Office and Legal Counsel about what documentation is required for Ch2M to conduct geotech, construction and other work on private parcels for connections to water main.
- 4) Navy action: Contact Jennifer Meyers (Navy Community Planner Liaison Officer) about how to build structures outside the development envelope for the Town's treatment plant improvements
- 5) Town action: Provide the Navy the requirements for water main maintenance on Big Cedar (width of road and turnaround radius, other requirements as necessary)

Note that the following must be complete before Ch2M can start obtaining easements for the Town on Big Cedar Lane. These items are dependent on completing the actions above.

- 1) Navy provide the Town with a letter detailing the work we plan to conduct for the long-term solution (in-progress) need information from #1, 2, 3, and 5 to complete
- 2) Navy provide revised scope to include access agreements procurement and Navy approves concurrence letter from CH2M including the addition of access agreements to their scope (in-progress) need information from #3 and 5 to complete

Thank you, Kendra

----Original Appointment----

From: Leibman, Kendra R CIV NAVFAC NW, EV32 Sent: Wednesday, February 28, 2018 5:55 PM

To: Leibman, Kendra R CIV NAVFAC NW, EV32; Jill Wood; 'Keith Higman'; 'Molly Hughes'; 'Kelly Riepma'; 'Kim Hinds'; 'Joe Grogan'; Ginn, Dina R CIV NAVFAC NW, EV3; Generous, Christopher CIV NAVFAC NW, EV32; 'Maco, Rebecca/SEA';

Maring, Matt/SEA

Cc: Madsen, Jennifer/SEA

Subject: Town of Coupeville Long-Term Solution: Access Agreement for Big Cedar Lane & Fire Flow Requirements

When: Monday, March 26, 2018 13:00-15:00 (UTC-08:00) Pacific Time (US & Canada).

Where: Island County Administrative Building, 1 NE 7th Street, Room 116, Coupeville, WA 98239

Molly Hughes

From:

Kelly Beech

Sent:

Friday, February 02, 2018 11:30 AM

To:

Molly Hughes

Subject:

Out-of-Town Average Bill

Attachments:

Consumption Activity.xlsx

The average Out-of-Town residential customer uses 1,170 cubic feet of water per billing cycle (2 months).

The bill for that kind of consumption, on an Out-of-Town residential connection is:

Base Rate per month: \$20.00

Consumption October-May (.0412/cu. Ft.): 4 x 1170 x .0412 = \$192.81

Consumption June - September (.0618/cu. Ft.) 2 x 1170 x .0618 = \$144.61

Annual average cost of an Out-of-Town residential connection: \$240 + \$192.81 + \$144.61 = \$577.42

Although I feel I should add that a family of four, who have a well for irrigation, had annual consumption of 12,065. Which is nearly twice as much as the total Out-of-Town residential average.

Without having any idea of how much a household's annual consumption actually is, it is very hard to estimate their potential bills.

Kelly

Kelly Beech, Clerk-Treasurer

Town of Coupeville

4 NE 7th Street

PO Box 725

Coupeville, WA 98239

360-678-4461 ext. 7

360-678-3299 (fax)

clerktreasurer@townofcoupeville.org

www.townofcoupeville.org

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Yount - Z

Fred Cichson - Z

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4×2010×.0412 = 329,60

2 × 2000 × .0618 = 247.20

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Madrona 2084 1103.0 Tossey, Melvin D. 295 1,726 Good Beach 1940 2334.0 Wilson, Elizabeth C. 303 2,354 Madrona 2123 1866.0 Hughes, Larry 319 1,975 Wellswood 1646 1587.0 Dutcher, Alan & Lorae 339 8,852 Madrona Way 2110 1032.1 Slichter, Sherrill 343 2,042 Madrona Way 2108 1032.0 Slichter, Sherrill 344 1,015 Madrona Way 2229 2615.0 Sell, Margaret McNichol & Sue 346 3,396 Engle, S 697 1700.0 Moore, Susan P 358 2,629 Madrona 2172 1138.0 Shelton, Julie 377 1,183 Cathedral, S 764 2302.0 Weinstein, Cary 384 2,881 Covey Run 1748 1614.0 Callahan, John & Dorte 384 8,995 Engle, S 723 1959.0 Smith, Keith 386 2,090 Wellswood 1668 1201.0 Merwine, Charles & Glenda 389 4,111 Madrona 1647 2671.0 Zuckerman, Anne 393 5,868 Mistywood Dr, N 283 1796.0 Carlson, Ed 395 2,675 Madrona 1691 1110.0 Lang, Brent & Julie <td< td=""><td>FT Casey, S 267</td><td>2538.0 Ness, Dez</td><td>291</td><td>2,492</td></td<>	FT Casey, S 267	2538.0 Ness, Dez	291	2,492
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Madrona 2100	1562.0 Hart, Kenneth	401	2,932
Black, W 1476	2480.0 Haga, Kevin	405	2,750
Twn Lgn LN 2097	1449.0 Stone, John	406	9,913
Carriage, N 91	2512.0 Talavera, Dominic	426	3,168
Madrona 2107	1682.0 Mueller, Lauren	437	2,565
Ebey, S 140	1258.0 Baxter, Kathy	441	3,636
Engle, S 405	2000.0 Arends, Kim	450	3,102
Rosewood, N 321	1703.0 Shergalis, Philip	452	4,171
Parker, NW 621	1219.1 Marti, Rick	463	3,152
Madrona 2046	1829.0 Marter, Suzanne	481	3,710
Indian Hill 695	2176.0 Rockafellar, Michael	481	4,357
Cpt Whd Inn 2039	1277.0 Gubner, Dr. Richard	482	3,632
Madrona Way 1731	2517.0 Johnson, Jennifer & Steven	488	3,889
Sherman N 106C	1418.0 Penn Cove Shellfish, LLC	500	2,178
Cathedral, S 680	2838.0 Schlagel, Peter	503	1,789
Good Beach Ln 1924	1006.0 Thompson, Garry & Maureen	508	5,726
FT Casey, S 217	2792.0 Luginbill, Kiersten Ann	519	4,121
Cathedral, S 760	1384.0 Johanson, John	520	3,735
Madrona 1893	1756.0 Toeppen, Lou	521	3,864
SR 20 23994	1369.0 Kitch, Elaine	534	3,412
Madrona Way 1785	1120.0 Golgart, Stuart	557	4,029
Burchell 1066	1292.0 Hicks, Lidabeth	579	2,202
Madrona 1875	1496.0 Lester, Debra	580	3,266
Marine DR 443	2787.0 Green, Gareth Sylvans	581	6,114
FT Casey, S 187	1586.0 Bur, Gerald	593	4,611
Edgefield Ln 805	2677.0 Nance, Darrell	593	5,470
Terry, W 1203	1134.0 Iverson, M.	594	3,391 Bowling Alley
SR 20 22289	1246.0 James, Lee	596	2,541
Engle, S 781	2010.0 Brown, Cathy	608	4,088
Cathedral, S 706	1702.0 Viertel, William	614	4,045
Ebey, S 163	1211.0 Mickunas, Larry	618	3,573
Madrona 2031	1402.0 Squire, Carol	621	7,017
Cpt Whd Inn 2054	1672.0 lwerks, Loren D.	634	4,424
Rosewood Ct 315	2525.0 Barville, David & Rebecca	663	5,199
Madrona 1715	1389.0 Kelley, Patrick & Cindy	671	4,156
Black, W 1526	2802.0 Matthews, Lafonya	672	2,617
Madrona 2066	2854.0 Faber, Justus	675	1,376
Madrona 1773	1184.0 Vier, Karla	676	5,753
Engle, S 395	2309.0 Hancock, Alan & Elizabeth	677	4,621
Madrona Way 1673	1042.0 Sahli, Tom & Leanne	702	5,877
Madrona 1735	1532.0 Bender, Kenneth & Suzi	720	5,304
Madrona Way 2082	1076.0 Kempbell, Phillip R.	723	4,794

	Twn Lgn LN 2092	1620.1	Wyatt, Fred & Jacki	1,368	9,817
	Ebey, S 154	2724.0	Sherman, Brad & Abbey	1,446	9,127
	Engle, S 538	1202.0	Einterz, Fran	1,454	13,972 Jenne Farm
	FT Casey, S 207	2008.0	Cross, Jeff & Della	1,458	6,797
	Madrona 2126	2687.0	Boyle, James & Frances C. Bainor-Boyle	1,518	8,010
	Hill, W 1520	1718.0	Bishop, Wilbur	1,520	10,223
	Rosewood, N 305	1484.0	Schwartz, Matthew	1,535	7,707
	Carriage, N 71	1423.0	Quinn, Shelby	1,544	12,607
	Vine, N 121	2104.0	McGregor, Denise	1,634	13,321
	Carriage, N 92	2033.0	Anderson, Harold	1,640	8,500
	FT Casey, S 302	2576.0	Rutecki, Betty	1,659	10,205
	Madrona 2039	1636.1	McDonald, Tim	1,717	12,338
	Cathedral, S 688	1492.0	Sivertsen, Greg & Kathy	1,725	9,970
	Terry Rd, W 1167	1069.0	Thorn, Blake	1,768	12,065
	Ebey, S 172	1408.0	Sherman, Dale	1,815	10,168
	Ebey, S 209	1632.0	Vincent-Jones, David	1,833	7,151
	FT Casey, S 205	2618.0	Howard, Nathan & Erin	1,849	11,005
	Madrona 1988	1721.0	Garthwaite, Carolyn	1,978	7,499
	FT Casey, S 209	1102.0	Compass Health	1,984	13,963 7
	Madrona 2111	1430.0	Mueller, Louise E	2,217	18,827
	Indian Hill 685	1225.0	Nash, Robert W & Amy Byhave	2,352	17,715
	FT Casey, S 186	1482.0	Beech, Michael & Kelly	2,379	13,354
	Cathedral, S 750	1329.0	Sherhill Vista Farms	2,450	28,563
	Indian Hill 647	2481.0	Jackson, Keith & Carolyn	2,534	10,769
	Cathedral, S 732	2575.0	McGarry, Michael	2,551	17,307
	Terry, W 1112	1745.0	Engle, Len & Terri	2,739	19,024
	FT Casey, S 315	1420.0	Charleton, Charles	2,769	22,156 7
	Cpt Whd Inn 2037	2138.0	Dausey, Michael & Cindy	2,906	18,362 7
-	Madrona 2136	1619.0	Mcginnis, Chris 290 ts	3,676	22,526
	Terry, W 1153		Meyers, Pat	4,838	16,972
	Indian Hill 670	1893.0	Stahura Family Revocable Trust By thuse	12,387	55,788 7
-	Madrona 2177	2589.0	Turner, Ian & Malia	24,998	28,605 🕇
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	No. 1 and 1	0	Jan Programme	\$1	001

Sea Holly 61	1710.0 Owner, Roger & Sue	739	6,154
Cathedral Dr, S 740	1022.0 Barbieri, Mark	745	4,458
Ebey, S 89	1143.1 Engle, David	759	5,050
Madrona 1700	2024.0 Evans, Brian	774	8,806
Sherman, N 103	1692.0 Lidral, Leona	783	7,491
Engle, S 315	1963.0 Purdue, Wilbur Roger	784	12,756 Farm?
Madrona 2225	2166.0 Heller, Stephen & Marilyn	790	5,318
Engle, S 895	2013.0 Mcclain, Jeffrey	819	4,471
Windancer 1630	1176.0 Rojas, Manny & Janet	820	6,719
Parker, NW 623	1581.0 Piper, Nate & Deborah	825	5,745
Twn Lgn LN 2058	2175.0 AJP, Inc.	833	4,813
Engle, S 655	2631.0 Kyle, Margaret	867	8,025
Cathedral, S 716	1393.0 Nordberg, Gerald & Linda	870	11,708
Henry Loop 1045	1565.0 Lewis, Wayne	875	5,819
Kennedy Lagoon Ct 2230	2816.0 An leVernon, Christi	878	3,590
Wellswood 1624	1966.0 Wells, Brianna	879	8,753
FT Casey, S 280	1396.0 Salmon, Nancy	886	6,787
Indian Hill 635	2684.0 Swanson, Lena & Reed	887	5,556
Engle, S 797	1093.0 Bradley, Connie	920	7,885
Sherman, N 97	1588.0 Lamb, Russel & Laurie	929	4,871
Wind Dancer 1646	1856.0 Bachmann, Charles	931	7,565
Sherman Rd 165	1375.0 Sell, John & Patricia	933	5,148
Burchell Rd 1075	1017.0 Pickard, Jan	942	14,307
FT Casey, S 202	1560.0 Yount, Ronald	947	6,696
Ebey, S 26	2770.0 Kempton, Jake & Ellisha	973	9,973
Henry Loop 1067	1174.0 McCormick Sr. , Richard	974	6,406
Good Beach 1966	1499.0 Richards, Larry	983	14,192
Madrona 1871	2177.0 Thayer, Thomas	1,008	8,856
Madrona 1759	2378.0 Sherman, James L.	1,031	6,392
Cathedral, S 730	2660.0 Burchard, John & Margaret	1,034	7,365
Madrona 1849	1234.0 Garrison, Lynn	1,039	10,207
Parker Rd, W 503	1058.0 Tamura, Richard	1,063	16,703
Terry, W 1040	1853.0 Boling, John J.	1,079	9,047
Madrona 2166	1547.0 Walker, Lewis J	1,143	6,745
Sea Holly Ln 66	2765.0 Schroeder, Regina	1,161	7,920
Crown, N 324	1356.0 Johnson, Robert W	1,176	7,262
Sherman Rd, N 109	1100.0 Homan, Rodney	1,192	9,431
Wind Dancer 1654	1818.0 Scoble, Richard	1,205	9,829
Rosewood, N 318	2676.0 Kelly, Matthew & Amanda	1,248	7,715
Engle Rd, S 937	1046.0 Stelle, William	1,251	5,941
Terry, W 987	2330.0 Dehaven, Steven	1,310	7,359
FT Casey, S 281	1302.0 Skubi, William & Jan	1,325	8,178



Application for Utility Permit or Franchise

	Permit/Franchise No.
Applicant - Please print or type all information	
Franc	hise Amendment Category 2 \$300.00 hise Renewal \$250.00 Category 3 \$150.00 hise Consolidation \$300.00
Water service line	on a portion of
State Route 20 (at/from) Mile Post 15	to Mile Post 15.25 in Island County,
to begin in the <u>NW</u> Section <u>13</u> Township	o 31 North: Range 1 West/East W.M.
	o 31 North: Range 1 West/East W.M.
The applicant promises to pay any additional costs Transportation (Department) on the behalf of the a	cover the basic administrative expenses incident to C 468-34 and RCW 47.44 and amendments thereto. incurred by the Washington State Department of pplicant. to "Washington State Department of Transportation"
A 15 1 15 1 15 1 15 1 15 1 15 1 15 1 15	
Applicant (Referred to as Utility)	Applicant Authorized Signature
Town of Coupeville	Molly Hughes
Address	Print or Type Name
PO Box 725 WA 9823	Mayor
City State Zip Coo Coupeville	Title
Telephone 360-678-4461 Ex. 2	Dated this 13th day of March , 2018
Email	91-6001418
mayor@townofcoupeville.org	Federal Tax ID or Social Security
Applicant Reference (WO) Number	upy Only if Approved Below
	chise, as applicable, subject to the terms and conditions
stated in the General Provisions, and Exhibits attac	thed hereto and by this reference made a part hereof.
Exhibits Attached	rtment Use Only
- Ambito / teachiou	,
	Department Accounting Reference Number
	The state of the s

In accepting this Franchise Amendment No. ____ to Franchise No. _____, Utility agrees that the General Provisions to the original Franchise and any previous Amendments shall be replaced in their entirety with the General Provisions as included with this Amendment. All other terms and conditions shall remain in full force and effect.

General Provisions

This Permit or Franchise is issued pursuant to the terms of RCW 47.32, RCW 47.44, and WAC 468-34, and amendments thereto. Renewal of a Franchise must be by application prior to expiration of this Franchise as required by RCW 47.44.020(3).

- 1. A copy of this Permit or Franchise must be on the job site, protected from the elements, at all times during any construction authorized by this Permit or Franchise.
- 2. The Utility agrees to pay the reasonable costs for investigating, handling, and granting the Permit or Franchise, including, but not limited to basic overhead charges and for providing an inspector during construction and/or maintenance of the Utility's facilities. Further, the Utility agrees that it shall be responsible for and pay the Department's expended direct and indirect costs associated with applicable provisions of the Permit or Franchise. The Department will assign a reimbursable account to the Utility as a means of invoicing the Utility for the costs associated with this Permit or Franchise.
 - (a) The Department will assign a reimbursable account to the Utility as a means of invoicing the Utility for the costs associated with this Permit or Franchise.
 - (b) The Department will invoice the Utility and the Utility agrees to pay the Department within thirty (30) calendar days of receipt of an invoice.
- 3. Upon approval of this Permit or Franchise, the Utility shall diligently proceed with the Work and comply with all General and Special provisions herein. Construction of facilities proposed under this Permit or Franchise shall begin within one (1) year and must be completed within three (3) years from date of Department approval. "Work" under this Permit or Franchise shall mean construction, operation, and maintenance of the Utility's facilities as authorized herein.
- 4. The Utility shall notify the Department representative in special provision 1 of the name, address, and telephone number of its contractor when Work outlined herein is going to be performed with other than its own forces. When the Utility uses a contractor, an authorized representative of the Utility shall be present at all times unless otherwise agreed to by the Department representative. A list of authorized representatives shall be submitted prior to the construction start date. (Authorized representatives are defined as persons having signatory authority for the Utility and or the authority to control the Work as needed for any issues identified by the Department.)
- The Utility agrees to schedule and perform its Work in such a manner as not to delay the Department's contractor's work when the Department has a contractor performing work in the vicinity of the Utility's Work.
- 6. All contact between the Department and the Utility's contractor shall be through the Utility representative. Where the Utility chooses to perform the Work with its own forces, it may elect to appoint one of its own employees engaged in the Work as its representative. The Utility, at its own expense, shall adequately police and supervise all Work performed by itself, its contractor, subcontractor, agent, and/or others, so as not to endanger or injure any person or property.
- 7. The Utility shall contact the identified Department representative two (2) weeks prior to conducting Work, to determine the location of survey control monuments within the area in which the Utility will be working. In the event any monument or right of way marker will be altered, damaged, or destroyed by the Utility, the Department, prior to Utility Work, will reference or reset the monument or right of way marker. During the Work, upon discovery of a monument or right of way marker, the Utility shall cease Work in that area and immediately notify the Department of the discovery. The Department will coordinate with the Utility to ensure that the monument or right of way marker is recorded or replaced. The Utility agrees to pay all Department costs to perform monument or right of way marker work, as provided in this provision, in accordance with general provision 2.
- 8. In the event any milepost, fence, or guardrail is located within the limits of the Utility's Work and will be disturbed during Utility Work, the Utility agrees to carefully remove these highway facilities prior to Utility Work and reset or replace these highway facilities after the Utility Work, to the Department's sole satisfaction and at the sole cost of the Utility. The Utility agrees that all highway signs and traffic control devices shall not be removed or disturbed during Utility Work.
- 9. The Utility agrees that all Work shall be done to the satisfaction of the Department. All material and workmanship shall conform to the Department's Standard Specifications for Road, Bridge, and Municipal Construction, current edition, and amendments thereto, and shall be subject to Department inspection.

NAME STREET ADDRESS CITY STATE ZIP



Dear XX:

SUBJECT: LONG-TERM DRINKING WATER PROTECTION ACTIONS FOR TOWN OF COUPEVILLE

I am writing to you regarding the U.S. Navy's drinking water investigation near Naval Air Station Whidbey Island's Outlying Landing Field Coupeville for per- and polyfluoroalkyl substances (PFAS), specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The Navy's decision on a long-term solution addresses both private drinking water wells with exceedances above the Environmental Protection Agency (EPA) Lifetime Health Advisory (LHA), as confirmed by the Navy, and protection of the Town of Coupeville's drinking water from potential impacts of PFOS/PFOA. The Navy will design and install a PFAS treatment system to ensure the Town's drinking water remains below the LHA and extend the drinking water distribution system to affected residents. The Navy appreciates your support in executing this solution and is providing this letter to clarify the Navy's intentions. The action will include two three parts: 1) design and 2) construct the PFAS treatment system and extension of water distribution lines and installation of the treatment system and extension of water distribution lines; and 23) the operation and maintenance (O&M) of the PFAS treatment systemfacility until an Environmental Services Cooperative Agreement (ESCA) is in place. Each of these steps will be taken at the Navy's sole expense.

The design and construction of the treatment system will be conducted by the Navy and Navy contractors in coordination with you and the Town of Coupeville Utilities and Public Works Department. The work will include the following:

- Design and construct a treatment system for the Town of Coupeville's drinking water system to ensure PFOS and/or PFOA remain below the LHA. The design will include adaption alternatives to address future applicable federal or state PFAS drinking water regulations;—Prior to construction and securing required permits, design of the system will be made available for review of the Town, DOH and County Public Health Department.
- Design and construct new water main and private service lines to connect residences to the Town of Coupeville's drinking water distribution system for those homes now and in the future where PFOS and/or PFOA exceed the LHA.
- Obtain all required access agreements and permits to perform the work;
- Develop O&M plans for the <u>PFAS</u> treatment <u>systemplant</u>; and
- Obtain necessary approvals from <u>Town of Coupeville</u>. Washington State Department of Health and Island County Public Health Department.

A separate and more detailed Memorandum of Understanding (MOU) between the Navy and the Town of Coupeville will be negotiated within 90 days of the date of this letter to clarify the roles and responsibilities between the Navy and the Town as we continue planning, design and construction. The MOU will memorialize the long-term solution described above and will be signed by the Town and the Navy. Construction and installation of the treatment system improvements will not occur until the MOU is agreed upon and signed by Town and the Navy.

After construction of the systemsystem and acceptance of the improvements by the Town, the operational requirements and physical improvements of the treatment system are intended to be transferred from the Navy to the Town of Coupeville under an Environmental Services Cooperative Agreement (ESCA). The ESCA will detail the requirements and fund the Town or its qualified contractor to conduct O&M in accordance with the finalized O&M plans. The ESCA will also include funding to conduct required drinking water monitoring to maintain effectiveness of the treatment system and ensure the Town's drinking water remains below the EPA's LHA as they currently read or are hereafter amended. The agreement will be for two years, funded annually, and renewed every two years as necessary, until based on reliable scientific data the threat of water supply contamination from PFASOA's to the Town supply and private wells has been eliminated.

The Navy appreciates the support and cooperation of the Town of Coupeville as we work to address this public health concern. If you have technical questions, please address them to the Navy's Remedial Project Manager, Ms. Kendra Leibman at kendra.leibman@navy.mil or contact her by phone at 360-396-0022. If you have other concerns, please don't hesitate to contact me directly.

Sincerely,

G. C. MOORE Captain, U.S. Navy Commanding Officer Naval Air Station Whidbey Island

Leibman, Kendra R CIV NAVFAC NW, EV32

From:

Leibman, Kendra R CIV NAVFAC NW, EV32

Sent:

Thursday, June 14, 2018 16:57

To:

Generous, Christopher CIV NAVFAC NW, EV32; 'Molly Hughes'; Maco, Rebecca/SEA;

Maring, Matt/SEA; 'Joe Grogan'; 'Kelly Riepma'; 'Madsen, Jennifer/SEA'

Subject:

RE: Monthly Update for the Coupeville Long-Term Solution

Attachments:

Fig3 Site Layout Overview.pdf

Good afternoon,

Below is an agenda for tomorrow's meeting:

Agenda

- Town's Comments on design
- Design Basis
 - * Approach
 - Treatment GAC preferred alternative
 - Supply Pipeline extension and pump system upgrades
 - * Reference PDR Figure 1-2
 - Capacity
 - * 2 GAC trains @ 250 gpm EA
 - * Provisions for future 3rd GAC train
 - * Reference Figure PDR 2-1
 - * Siting
 - * Reference Figure PDR 1-3
- Predesign Field Work and Coordination
 - Utility locates
 - * Geotech 13 proposed borings (see attached map)
 - * Survey to take place after geotech
 - * Historic and Cultural Resources will be on-site for observation during drilling
 - Permitting during field work
 - * Island County ROW Permit
 - * WSDOT General Use Permit
 - * Easements (Big Cedar Lane)
- Town's comments on MOU

Thanks!

Kendra

----Original Appointment-----

From: Leibman, Kendra R CIV NAVFAC NW, EV32 Sent: Thursday, December 28, 2017 6:33 PM

To: Leibman, Kendra R CIV NAVFAC NW, EV32; Generous, Christopher CIV NAVFAC NW, EV32; 'Molly Hughes'; Maco,

Rebecca/SEA; Maring, Matt/SEA; 'Joe Grogan'; 'Kelly Riepma'; 'Kim Hinds'

Cc: 'Madsen, Jennifer/SEA'

Subject: Monthly Update for the Coupeville Long-Term Solution

When: Friday, June 15, 2018 11:00-12:00 (UTC-08:00) Pacific Time (US & Canada).



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5726 Ser N46/1232 April 24, 2018

The Honorable Molly Hughes Mayor of Coupeville P. O. Box 725 Coupeville, WA 98239

Dear Mayor Hughes:

SUBJECT: LONG-TERM DRINKING WATER PROTECTION ACTIONS FOR TOWN OF

COUPEVILLE

I am writing to you regarding the U.S. Navy's drinking water investigation near Naval Air Station Whidbey Island's Outlying Landing Field Coupeville for per- and polyfluoroalkyl substances (PFAS), specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The Navy's decision on a long-term solution addresses both private drinking water wells with exceedances above the Environmental Protection Agency (EPA) Lifetime Health Advisory (LHA), as confirmed by the Navy, and protection of the Town of Coupeville's drinking water from potential impacts of PFOS/PFOA. The Navy will design and install a PFAS treatment system to ensure the Town's drinking water remains below the LHA and extend the drinking water distribution system to affected residents. The Navy appreciates your support in executing this solution and is providing this letter to clarify the Navy's intentions. The action will include three parts: 1) design, 2) construct the PFAS treatment system and extension of water distribution lines; and 3) operation and maintenance (O&M) of the PFAS treatment system until an Environmental Services Cooperative Agreement (ESCA) is in place.

The design and construction of the treatment system will be conducted by the Navy and Navy contractors in coordination with you and the Town of Coupeville Utilities and Public Works Department. The work will include the following:

- a. Design and construct a treatment system for the Town of Coupeville's drinking water system to ensure PFOS and/or PFOA remain below the LHA. The design will include adaption alternatives to address future applicable federal or state PFAS drinking water regulations;
- b. design and construct new water main and private service lines to connect residences to the Town of Coupeville's drinking water distribution system for those homes where PFOS and/or PFOA exceed the LHA;
 - c. obtain all required access agreements to perform the work;
 - d. develop O&M plans for the PFAS treatment system; and
- e. obtain necessary approvals from Washington State Department of Health and Island County Public Health Department.

5726 Ser N46/ 1232 April 24, 2018

A separate and more detailed Memorandum of Understanding (MOU) between the Navy and the Town of Coupeville will be negotiated to clarify the roles and responsibilities between the Navy and the Town of Coupeville as we continue planning, design and construction. The MOU will memorialize the long-term solution described above and will be signed by the Town of Coupeville and the Navy.

After construction of the system, the operational requirements of the treatment system are intended to be transferred from the Navy to the Town of Coupeville under an ESCA. The ESCA will detail the requirements and fund the Town to conduct O&M in accordance with the finalized O&M plans. The ESCA will also include funding to conduct required drinking water monitoring to maintain effectiveness of the treatment system and ensure the Town's drinking water remains below the EPA's LHA. The agreement will be for two years, funded annually, and renewed every two years, as necessary.

The Navy appreciates the support and cooperation of the Town of Coupeville as we work to address this public health concern. If you have technical questions, please address them to the Navy's Remedial Project Manager, Ms. Kendra Leibman, at kendra.leibman@navy.mil or 360-396-0022. If you have other concerns, please do not hesitate to contact me directly.

Sincerely,

G. C. MOORE

Captain, U.S. Navy

Commanding Officer

Molly Hughes

From:

Leibman, Kendra R CIV NAVFAC NW, EV32 <kendra.leibman@navy.mil>

Sent:

Wednesday, January 31, 2018 12:49 PM

To:

Molly Hughes

Cc:

Joe Grogan

Subject:

FOUO- Coupeville Impacted Parcels

Attachments:

FOUO Coupeville Impacted Parcels.pdf

Hi Molly,

Attached is a map showing the impacted parcels.

The names and addresses are shown below.

Cliff & Kristine Fellrath 15148 State Route 20

James Heidinger

310 Big Cedar Lane

Keith & Jan Hovland

15207 State Route 20

Gary & Jane Johnsen

15218 State Route 20

Mark & Kristi Korzan

294 Big Cedar Lane

Mike & Pat Millenbach 1023 Keystone Hill Rd Steve & Sandra Swanson

15203 State Route 20

Oscar Bececca (home owner)

shares well w/Johnsen

David & Melanie Hovland

shares well w/Swansons

Andrew & Jennifer Crawford

258 Big Cedar Lane

I look forward to meeting with you on Friday.

Kendra

Kendra Leibman, P.E. Remedial Project Manager

NAVFAC NW 1101 Tautog Circle, Suite 203 Silverdale, WA 98315-1101

(O) 360-396-0022

(C) 509-999-6843

(F) 360-396-0857

kendra.leibman@navy.mil

2025-2034

Meeting Agenda

Date: August 3, 2018

Location: Meet at Coupeville Town Hall

Subject: Town of Coupeville Long-Term Solution Update

Participants:

Town of Coupeville (Mayor Molly Hughes, Joe Grogan, Kelly Riepma)

US Navy (Kendra Leibman)

Jacobs Engineering (Rebecca Maco & Matt Maring)

1. **Design Basis Information**

- WTP Site Surveying Initial Survey Complete
- Pipe Alignment Surveying and Wetland Investigations (start mid-August 2018) Pending b. permitting and traffic control plan approval
- Geotechnical Investigation Borings and Historic/Cultural Resources Review (start mid-C. August 2018) - Pending services contract negotiation/award, permitting, and traffic control plan approval
- ď. WTP Pump Hydraulics Test Protocol - Under Development

2. Pre-Design/Design Development

- Process Mechanical Design Concept and Layouts Complete
- Predesign Sizing and Hydraulic Calculations In Progress
- WSDOH Review Comment Reponses In Progress
- Electrical Systems Integration Planning In Progress
- Instrumentation and Control's Systems Integration Planning In Progress
- 30% Design Workshop Review/Comment 2, 3, 4 or 5 October 2018 (one day)
 Building type (CMU or Pre-engineered) Discuss

3. **Delivery Planning**

- GAC System Procurement and RSSCT Testing Documents In Progress, proceeding in parallel with Pre-Design, will specify GAC vessel configuration to allow flexibility for use of GAC and IX media fill
- Construction Packages WTP Improvements, Pipeline Improvements
- Schedule Updates and Phasing In Progress, Phasing will be structured to include separate overlapping timelines for GAC Procurement, Treatment Process Improvements, Pumping Improvements, and Pipeline Improvements

Town/Navy Contract

- The tasks listed below will be contract...any more needed?
 - Review water line easement for Big Cedar Lane. The Town will file the easement.
 - Conduct an appraisal on each private property along the water line main on Big. Cedar Lane. Then oppraises
 - Negotiate and pay easement cost with each home owner on Big Cedar Lane where an easement is required for the water main line.
 - Review working right of ways on Island County and Washington State Department of Transportation (WSDOT) property for water line on Island County and WSDOT
 - Review all iterations of the PFAS treatment system and pipeline distribution system design.

Endog august Sole Source Cantract

Review Remedial Action Work Plans for construction of PFAS treatment system and pipeline distribution system design. Review PFAS Operations and Maintenance Plan for PFAS treatment upgrades. August 13 Coupeville Resident Meeting, CPO Club, 5-7pm 5. August 14 NASWI RAB Meeting, CPO Club, 5-7pm 6. 7 gaserents & O & M One you of Mresponsibility to



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WIHIDBEY ISLAND 3730 NORTH CHARLES PORTER AVENUE OAK HARBOR, WASHINGTON 98278-5000

> 5090 Ser N44/2334 July 31, 2018

The Honorable Molly Hughes Mayor of Coupeville PO Box 725 Coupeville, WA 98239-0725

Dear Mayor Hughes:

SUBJECT:

REQUEST FOR SECTION 106 CONSULTATION ON THE FINDING OF NO HISTORIC PROPERTIES EFFECTED FOR THE PROPOSED GROUND DISTURBING ACTIVITIES TO PERFORM A GEOTECHNICAL

INVESTIGATION FOR NEW WATER LINES, COUPEVILLE, ISLAND

COUNTY, WASHINGTON.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR 800, Naval Air Station (NAS) Whidbey Island is continuing consultation and asks for your comments on the finding of No Adverse Effect to Historic Properties for the proposed ground disturbing activities to perform a geotechnical investigation for construction of future water lines located near OLF Coupeville, at State Route 20, Wanamaker Rd, Keystone Hill Rd, and Big Cedar Ln, Coupeville, Island County, Washington (enclosures 1 and 2).

The Navy proposes to conduct geotechnical borings near OLF Coupeville. The geotechnical investigation will include up to 13 borings (enclosure 3). Boring data will guide the potential location of future waterlines. Once the geotechnical data has been analyzed, the Navy will consult with the consulting parties on the proposed construction of a waterline in this area.

Proposed work for boring includes:

- Drill up to 13, 7.25-inch diameter core holes in the footprint of the future water lines. Boring locations will have a 50-foot buffer to accommodate avoidance of driveways, utility locations, etc.
- Sample soil using hollow stem auger drilling equipment to an approximate depth of 10 to 40 feet.

The Area of Potential Effect (APE) for this undertaking includes the locations of the proposed borings in T31 R1E S13 (enclosure 4). Ground disturbance is limited to the geotechnical borings. Staging and access will occur on existing paved or graveled surfaces.

5090 Ser N44/2334 July 31, 2018

Excavations may penetrate fill and encounter native sediments, however the expected geology consists of glaciomarine drift and partridge gravel.

In an effort to identify historic properties within the APE, the Navy has reviewed available environmental and cultural literature within 200 meters of the project area (Table 1). The review determined two historic structure survey reports, one archaeological survey report and one monitoring report. The surveys resulted in the recording of several historic structures on Ault Field and Seaplane Base, but no historic properties are located within the APE.

Location	Author	Title	Report Type
AF, SPB,	Chidley,	Naval Air Station Whidbey Island Cold War	Historic
Raycon	Michael et	Study Phase 2: Inventory and Evaluation	Structures Survey
Hill, OLF	al. 2013		Report
AF, SPB,	Hampton,	Phase I Architecture Survey of Naval Air	Historic
Raycon	Roy et al.	Station Whidbey Island	Structures Survey
Hill, OLF	2010		Report
AF, OLF	Jones, Jason	Archaeological Inventory of Outlying	Archaeological
	2013	Landing Field, Coupeville and Select Lands	Survey Report
		of Ault Field, Naval Air Station Whidbey	
		Island	
Coupeville	Bush, Kelly	Archaeological Investigation and Monitoring	Monitoring
	2010	Report: Town of Coupeville Waterline	Report
Ebey's	1973	Central Whidbey Island Historic District	NHPA
Landing		NHPA Nomination Form	Nomination Form
Ebey's	R.E.	Comprehensive Plan for Ebey's Landing	EIS
Landing	Dickenson	National Historic Reserve	
	1980		
Ebey's	D. Duer	Ebey's Landing National Historical Reserve:	Ethnohistory
Landing	2009	An Ethnohistory of Traditionally Associated	
		Contemporary Populations	
Ebey's	S. Steen et	Ebey's LandingNational Historical Reserve	Historic
Landing	al.	Historic Buildings Inventory 2016 Update	Structures Survey
	2016		Report
Ebey's	G. Evans-	Historic Resources Study: Ebey's Landing	Historic Context
Landing	Hatch et al.	National Historic Reserve Whidbey Island,	Study
	2005	Washington	

Table 1

Our literature review also revealed the following information regarding the APE:

• The underlying geology of the ground disturbing APE consists of Pleistocene glaciomarine drift and high-energy outwash gravel. Soils within the APE are classified as

Keystone-Utsalady complex, and Sucia-Sholander cool complex. Both the Keystone and Sucia complexes consist of well-draining loamy soils formed in glacial outwash. These soils are found in valleys of drift plains. These soils are ideal for livestock pasture, crop production, and forestry. Natural vegetation consists of doug fir, lodgepole pine, oceanspray, salal, Oregon grape, and bracken fern (https://soilseries.sc.egov.usda.gov/OSD_Docs/SUCIA.html accessed 7/30/2018).

- No prehistoric or historic-era archaeological sites have been recorded within 200 meters of the APE. The nearest archaeological site, 45IS317, is located 211 meters north of the APE. 45IS317 is a historic isolate consisting of a whiteware fragment. Shovel tests were performed at the site, but no other artifacts were located.
- The proposed activity is occurring in Central Whidbey Island Historic District within boundary of the Ebey's Landing National Historical Reserve. The proposed undertaking will not impact any contributing or eligible historic property or viewshed in the Central Whidbey Island Historic District.

The Navy has determined that the proposed undertaking will have No Adverse Effect to Historic Properties because no archaeological sites are known to exist within the APE, no eligible or contributing historic property in the Central Whidbey Island Historic District will be adversely affected by the proposed undertaking, and there is little likelihood for in-tact archaeological deposits to be present in the APE.

Although it is highly unlikely that archaeological resources will be found, there is always the potential for an unanticipated discovery. Therefore, a copy of the inadvertent discovery plan will be provided to the contractor alerting them to cease work and notify the Cultural Resource Program Manager if a discovery is made.

The Navy understands that the APE and its surrounding location may have cultural importance and significance to members of the traditional cultural groups of Whidbey Island. In order to identify possible religious or cultural significance to affected tribes, the Navy has initiated consultation with the Swinomish Indian Tribal Community, the Samish Indian Nation, the Upper Skagit Indian Tribe, and the Stillaguamish Tribe of Indians. The Navy has also initiated consultation with the State Historic Preservation Officer (SHPO), National Park Service, and Ebey's Landing National Historical Reserve.

The Navy requests your comments on the finding of No Historic Properties Effected for the proposed undertaking. If you require additional information, I can be reached at (360) 257-6780 or email at Kendall.Campbell1@navy.mil.

Sincerely,

KENDALL CAMPBELL

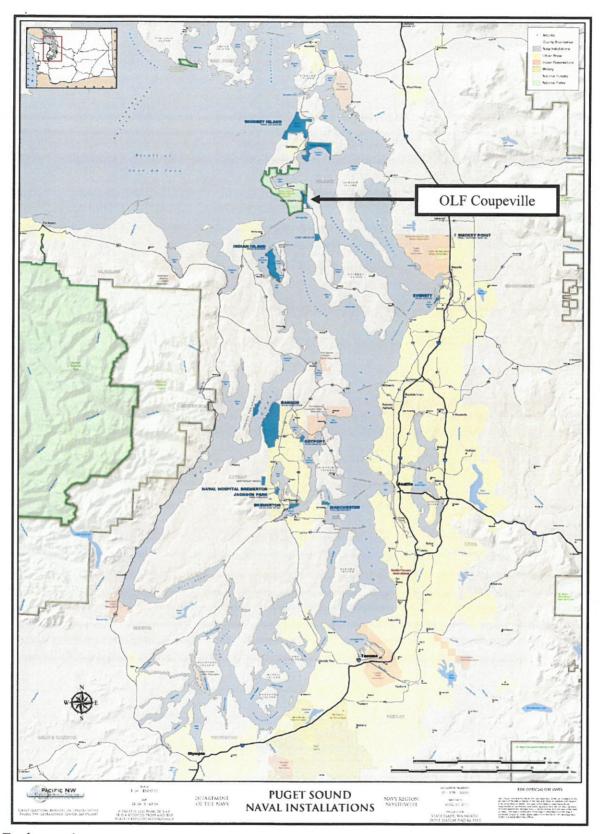
NASWI Cultural Resources Program Manager and

Archaeologist

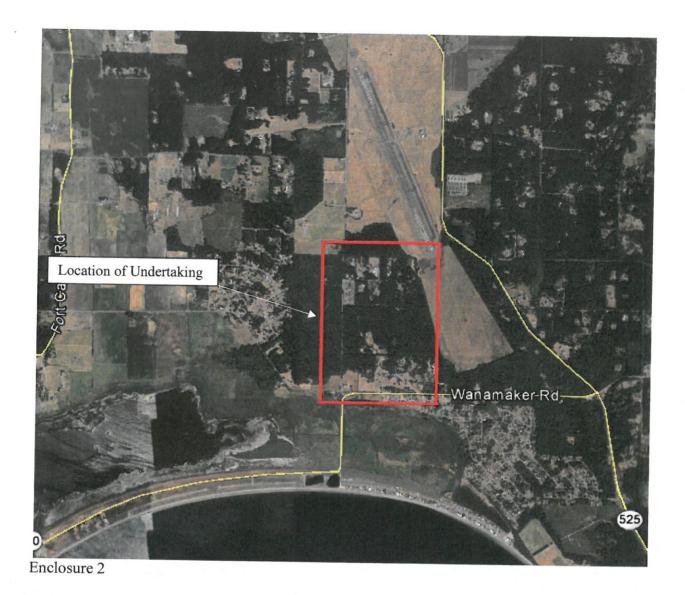
By Direction of the Commanding Officer

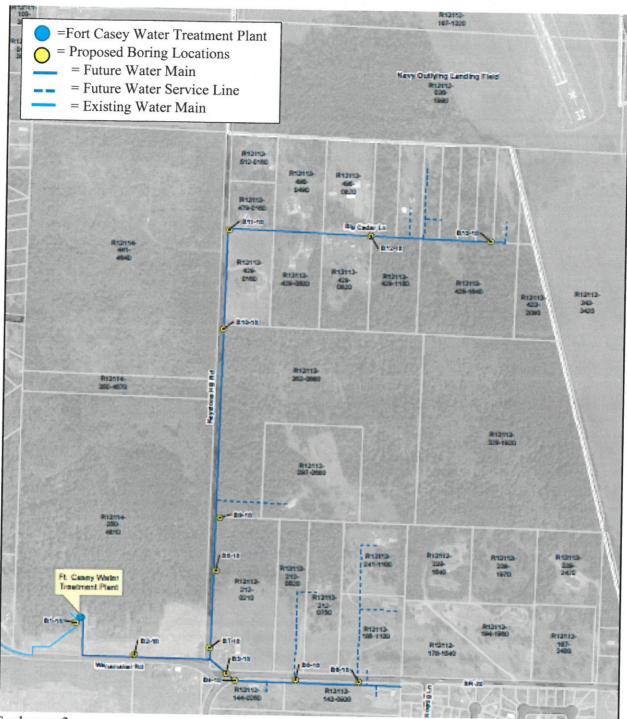
Enclosures:

- 1. Location of Coupeville WA
- 2. Location of Undertaking
- 3. Proposed Exploration Locations
- 4. Area of Potential Effects



Enclosure 1





Enclosure 3



Enclosure 4

MEMORANDUM OF UNDERSTANDING between THE TOWN OF COUPEVILLE, WASHINGTON

THE U.S. DEPARTMENT OF THE NAVY Regarding

Long-Term Drinking Water Protection Actions for the Town of Coupeville

THIS MEMORANDUM OF UNDERSTANDING (hereafter the "MOU") is entered into this 23'dday of July ____, 2018, by and between the Town of Coupeville, Washington (hereafter referred to as "Coupeville") and the United States Navy (hereafter referred to as "the Navy") for the specific purposes set forth herein. When referred to collectively, Coupeville and

1. BACKGROUND

- 1.1. Coupeville is an incorporated municipality under the Revised Code of Washington.
- 1.2. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq., as amended, and the Defense Environmental Restoration Program (DERP), 10 U.S.C. §§ 2701 et seq., as amended, establish site remediation obligations on the Department of Defense (DoD), including the Navy.
- 1.3. The Navy has sampled drinking water near Naval Air Station Whidbey Island's Outlying Landing Field (OLF) Coupeville and identified eight drinking water wells containing perfluorooctane sulfonate and/or perfluorooctanoic acid (PFOS/PFOA) concentrations above the Environmental Protection Agency's (EPA's) Life Time Health Advisory (LHA). The Navy has also determined that Coupeville's primary water supply well contains PFOS/PFOA just below the EPA's LHA.
- 1.4. The Navy has sampled groundwater at OLF Coupeville and found concentrations of PFOS/PFOA above the EPA's LHA. The Navy continues to delineate the extent of PFOS/PFOA contamination at the site and the potential to migrate into the surrounding areas including the drinking water supply for Coupeville.
- 1.5. Although all potential sources of the PFOS/PFOA in the drinking water may not have been identified, the Navy has proposed a long-term solution to protect Coupeville's drinking water from impacts of PFOS/PFOA in groundwater. This long-term solution has been discussed with Coupeville, Washington State Department of Health, Washington State Department of Ecology, Environmental Protection Agency, Island County and affected residents, and has been described in correspondence between the Navy, Coupeville, and the affected residents. This MOU memorializes the Navy's path forward to implement the proposed long-term solution.

2. AUTHORITIES

- 2.1. The Navy enters into this MOU under its authority pursuant to DERP, implementing DoD and Navy Directives, Instructions and Manuals, and CERCLA and its implementing regulations.
- 2.2. Coupeville enters into this MOU under its authority pursuant to RCW 35.27.370, RCW 35.23.352 and Chapter 39.34 RCW.

3. PURPOSE

3.1 This MOU is entered into by Coupeville and the Navy for the purpose of establishing the path forward for implementing the Navy's proposed plan for Coupeville's drinking water system. This MOU applies to the Navy's planned removal actions conducted under CERCLA/DERP to address drinking water which contains PFOS/PFOA concentrations above the EPA's LHA, as more specifically set forth below. The Parties contemplate the negotiation and award of an Environmental Services Cooperative Agreement (ESCA), under which the Navy will provide funding to Coupeville for long-term maintenance and operation of the proposed water treatment system. The parties agree to negotiate said agreement in good faith with the goal being a final ESCA Agreement upon completion of the proposed water treatment system.

4. UNDERSTANDINGS OF THE PARTIES

- 4.1. In order to implement the Navy's planned response actions conducted under CERCLA/DERP to address drinking water which contains PFOS/PFOA concentrations above the EPA's LHA, the Navy will:
 - 4.1.1. Design and construct a treatment system for Coupeville's drinking water system to ensure PFOS and/or PFOA remain below the LHA, which design will include adaption alternatives to address future applicable federal or state PFAS drinking water regulations. In the event the treatment system fails or is unable to treat Coupeville's drinking water to be below the LHA, the Navy will undertake design and construction of an alternative treatment system which will perform so as to ensure the water will remain below the LHA;
 - 4.1.2. Design and construct new water mains and private service lines to connect residences where PFOS and/or PFOA exceed the LHA to Coupeville's drinking water distribution system;
 - 4.1.3. Develop an Operations and Maintenance (O&M) Plan for the PFAS treatment system and operate and maintain the PFAS treatment system until the ESCA is executed, after which time Coupeville will assume O&M of the system;
 - 4.1.4. Obtain necessary reviews and approvals of the design and construction from Coupeville, Washington State Department of Health and Island County Public

Health Department, as required by such agencies.

- 4.1.5. Transfer operation of the treatment system to Coupeville under the ESCA until treatment is determined to be no longer necessary or a permanent remedial action decision is made. The water distribution lines will be installed to the standard for operation as required by Coupeville. After installation is complete, the Navy will transfer unencumbered ownership of all improvements to Coupeville, as appropriate or necessary.
- 4.1.7. Continue current groundwater and drinking water monitoring for PFAS compounds until the Navy determines monitoring is no longer necessary to protect human health and the environment.

4.2 Coupeville will:

- 4.2.1 Consistent with Coupeville Town Code, provide timely reviews and approvals to the Navy and/or its contractor(s), as necessary, to implement the proposed response action. Specifically, Coupeville will review and approve the following:
 - a. The PFAS treatment system and water line distribution system design;
 - b. The PFAS construction plans;
 - c. The Operation and Maintenance Manual for the PFAS treatment system.

The above list is not exhaustive and other reviews and approvals may be required consistent with Coupeville Town Code and adopted standards, Island County standards, and State Department of Health regulations as applicable to implement the removal action.

- 4.2.2 Assume responsibility for operations and maintenance of the treatment system after execution of the ESCA; and
- 4.2.3 As necessary, assist the Navy in effectively communicating the planned response action with affected residents and stakeholders.
- 4.3 The Navy and Coupeville will enter a contract to fund and obtain the necessary utility easements and associated access to implement the proposed response action. Any access agreements that are not required to be obtained by Coupeville via the contract will be obtained by the Navy's contractor.
- 5. **PERSONNEL:** Each Party is responsible for all costs of its personnel, including pay and benefits, support, and travel. Each Party is responsible for supervision and management of its personnel.

6. GENERAL PROVISIONS:

6.1. <u>Points of Contact</u>: The following points of contact will be used by the Parties to communicate in the implementation of this MOU. Each Party may change its point of contact upon reasonable notice to the other Party.

For the Navy:

Program POC:

Dina Ginn

DERP Navy Program Manager

360-396-0016

dina.ginn@navy.mil

Technical POC:

Kendra Leibman

DERP Navy Project Manager

360-396-0022

kendra.leibman@navy.mil

For Coupeville:

Program POC:

Ms. Molly Hughes

Honorable Mayor of Coupeville

360-678-4461

mayor@townofcoupeville.org

Technical POC:

Mr. Joe Grogan

360- 678-4461

Utility Superintendent

utilities1@townofcoupeville.org

- 6.2. <u>Funds and Manpower</u>: This MOU does not document nor provide for the exchange of funds or manpower between the Parties, nor does it make any commitment of funds or resources. Actions undertaken by the Navy pursuant to Article 4.1 will generally be performed through the Navy's environmental restoration contractor, unless performed directly by Navy personnel. The Navy's contractor for construction shall be licensed, bonded and insured contractor authorized to do business in the State of Washington
- 6.3. <u>Modification of MOU</u>: This MOU may only be modified by the written agreement of the Parties, duly signed by their authorized representatives. This MOU will be reviewed biennially on or around the anniversary of its effective date.
- 6.4. <u>Disputes</u>: Any disputes related to this MOU will, subject to any applicable law, Executive order, directive, or instruction, be resolved by consultation between the Parties.
- 6.5. <u>Termination of MOU</u>: This MOU may be terminated upon 30 days' notice by either Party.
- 6.6 <u>Transferability/assignment</u>: This MOU shall not be transferred or assigned except by the written consent of the Parties.
- 6.7. Entire Understanding: It is expressly understood and agreed that this MOU embodies the entire understanding between the Parties regarding the MOU's subject matter as of the date of its execution.

- 6.8. Effective Date: This MOU takes effect beginning on the day after the last Party signs.
- 6.9. Expiration Date: This MOU expires whenever any one of the following events occur:
 - a. the actions set forth in this MOU and the ESCA are completed;
 - b. the Navy determines that the response action is no longer required; or
 - c. ten years from the effective date.
- 6.10. <u>Authorities of the Parties</u>: Nothing in this MOU alters, limits, or supersedes the authorities and responsibilities of either Party on any matter within its jurisdiction. Nothing in this MOU shall require either Party to act beyond its authority. The roles, responsibilities, terms and conditions of this MOU will not supersede or be interpreted in a manner inconsistent with applicable laws and regulations. Nothing in the MOU shall be construed as a waiver of any right either party may have in equity or law.

On Behalf of the Town of Coupeville

Honorable Mayor, Town of Coupeville

Ms. Molly Hughes

Date: 7/23/2018

On Behalf of the U.S. Department of the Navy

C.S. GRAY

Rear Admiral, U.S. Navy

Commander, Navy Region Northwest

Date: 7/19/18

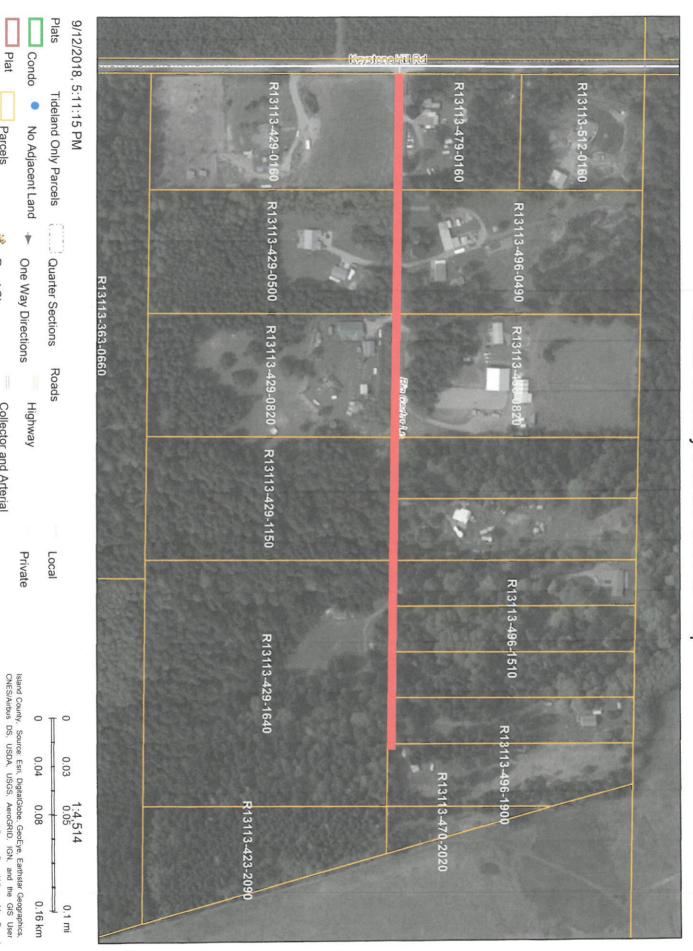
Updated Timeline



Action	Milestones
Pre-Design Field Work	Sept 2018-Oct 2018
Award contract with Town for easement on Big Cedar Lane	TBD Late Oct - Nov
Award contract for pipeline construction Awarded	26 Sept 2018
Permitting and 106 consultation for construction	Oct 2018-Jan 2019
30% Design	Oct 2018
90% Design	Dec 2018
100% Design	Jan 2019
Phased Construction*	Jan-Aug 2019
Award Cooperative Agreement to Town for PFAS Treatment Plant O&M	NLT Sept 2019

*Goal: PFAS treatment plant up and running before Summer 2019.

Island County Parcel Viewer Map



Parcels

1

Road Closures

Collector and Arterial

Island County Parcel Viewer Map Export DO NOT USE AS A LEGAL DOCUMENT, ACCURACY NOT GUARANTEED

PFAS CONTAMINATION OF OUR DRINKING WATER What You Should Know - What Can Be Done

It's been over a year since perfluoroalkyl substances (PFASs) from the Navy's Outlying Field (OLF) and Ault Field were found in public and private drinking water supplies.

Coupeville's PFAS contaminated water is still distributed to schools, homes, and the hospital. Levels of PFASs still exceed the health advisories of a number of states.

Families a mile from the OLF have had to abandon private wells because of PFAS contamination many times higher than EPA's health advisory level. After a year, they still drink, cook, and brush their teeth with water from plastic bottles delivered by the Navy.

People have a right to know about chemicals in the water they drink – especially those that build up in our bodies and have been linked to a host of health problems.¹

(_1 , .

The following information makes the case that those who should be protecting the community and its water are not doing so with the sense of urgency our contamination problem deserves. In some cases they have refused even to acknowledge the problem.

Ours is not the first community faced with this problem, and as mentioned at the end, not the only one where I have seen it play-out. Common sense and past experience says more can and should be done to address it. Rick Abraham 12-2-2017

Keeping the Public in the Dark

Our PFAS pollution results from the Navy's use of PFAS containing fire-fighting foam in its training exercises. The Navy has been neither proactive nor transparent in its response to this contamination. After a year, it has yet to identify the long-term solution it promised.

After finding PFASs in on its own property, the Navy tested nearby public and private drinking water supply wells, but for only *three* PFASs. It did not test for PFHpA and PFHxS, two chemicals it found in its own water. ²

When the Navy tested the community's water from November 2016 to June 2017, it used higher detection limits than were used on its own property.³ This allowed PFASs found in the water on its own property to go undetected in the community's water.⁴

Island County Health kept the plan for this investigation from the public, at the Navy's request, until after testing was underway.⁵

Coupeville's PFASs Finally Revealed

The Navy was not alone in keeping the public in the dark. In January of 2017, when The Town of Coupeville announced that PFOA had been found in its water, Mayor Molly Hughes stated, "We will continue to be completely transparent as new issues arise and new information is received."

It was later revealed that the Town had begun independently testing its water for five other PFASs in November of 2016, but waited until October 2017 to tell its water customers about all that were found, including perfluorohexane sulfonate (PFHxS) and perfluoroheptanoic acid (PFHpA)

There are concerns about the presence of PFASs in breast milk and umbilical cord blood, and the fact that levels found in the blood of infants and children are generally higher than in adults.⁶

Studies have linked PFHxS to immune system suppression and attention-deficit/hyperactivity disorder (ADHD) in children. ^{7 8} It takes 8.5 years for the body rid itself of half the PHFxS it has accumulated.

It is not surprising that some of PFASs, including PFHxS and PFOA, have been reported in the blood of Whidbey's pollution victims more than a hundred times the amount found in their contaminated water – and a thousand more than EPA's acceptable level for PFAS in drinking water.

Navy's Testing Still Leaves PFASs Undetected

In October of 2017 the Navy retested public and private water wells, this time with more sensitive detection limits and for *fourteen* PFASs instead of just three. However, this testing was only available to owners of wells where a PFAS had been previously detected. Wells adjacent to a property where a PFAS was detected above EPA's advisory limit were eligible for retesting, but not those with lower detections.

These loopholes effectively continued a 'one-test and walk away' policy for some wells where PFASs were found, and others at risk of contamination. The Navy ignored the realty of a spreading plume of contamination that can impact a well not previously contaminated – and that levels lower than EPA's advisory can over time increase to them.

- The well at the County's Rhododendron Park is close to the OLF and Coupeville's contaminated supply well. Yet, it has not been tested since December of 2016, and never for all the PFASs known to be in the aquifer.
- Wells supplying the homes at Crockett Lake Estates and Admirals Cove, all located to the south of the OLF and in the general direction the contamination, were not retested.

What is Safe - Standards and Advisories

The Navy and public officials are quick to point out that PFASs are unregulated chemicals without enforceable standards – implying that they are therefore safe to be drinking.

In fact, a chemical could be suspected – or even proven – to have adverse health effects and still not be regulated under the Safe Drinking Water Act.9 Many chemicals without standards have been detected in drinking water above the levels that authoritative scientific studies have found to pose health risks.¹⁰

- Hexavalent chromium, an industrial chemical made notorious by the film "Erin Brockovich," is unregulated after being detected in the drinking water of 250 million Americans.
- The industrial solvent 1,4-dioxane is unregulated despite being found in the drinking water of millions of people at levels above those the EPA considers to pose a negligible cancer risk.¹¹

Although EPA hasn't established enforceable standards for PFASs, it has set health advisory levels – but only for two of them. The EPAs health advisory level for PFOA and PFOS of 70 parts per trillion in drinking water has been widely criticized for not being adequately protective – which is why some states have more protective advisories. This is why some include PFHxS and PFHpA in their heath advisory.¹²

The lack of an EPA health advisory for PFASs, other than PFOA and PFOS does *not* mean they are safe to be drinking. It means they haven't been studied enough, in EPA's opinion, to make a determination one way or another.

Is the Water Really Contaminated?

Coupeville Mayor Molly Hughes has written that Coupeville's water was, "not technically contaminated." ¹³ She publicly accused a concerned citizen of "carelessly using the word 'contaminated' with reference to Coupeville' drinking water." Mayor Hughes characterized the use of the term as an "intentional distortion" that was made "without regard to its emotional or economic effect." ¹⁴

All the PFASs found in Coupeville's water are listed as "contaminants" in the EPA's Unregulated Contaminate Monitoring Rule (UCMR3). The Mayor and Town's Engineer used the term "contamination" in emails to other public officials when describing PFASs in the Town's supply well.

Coupeville was not required to monitor or report detections of these PFASs because of its size. However, our regulatory agencies encourage water systems that detect PFASs and other 'unregulated' chemicals to report them in the required annual Consumer Confidence Reports. 15

Coupeville only identified the detection of PFOA in the June 2017 Consumer Confidence Report sent to its customers The PFHpA, PFHxS and PFBS that had been detected by the Town were not identified.

According to EPA, reporting contaminants serves to, "Improve public health protection by providing educational material to allow consumers to make educated decisions regarding any potential health risks pertaining to the quality, treatment, and management of their drinking water supply."

When Coupeville told its water customers it was "committed" to keeping them "informed about water issues" it wasn't walking its talk.

The Politics of Pollution

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It's expected that polluters want to minimize negative publicity and limit their liability. Our politicians are not the first to accommodate polluters who have political and economic clout. Nor are they the first to keep information from the public, supposedly for the public's own good. Protecting business interests and tourist dollars to easily takes priority over respecting the community's right to know and be protected.

Concerned citizens, including this writer, who have dared to speak the inconvenient truth about PFASs, have been accused of being "alarmists" and their statements characterized as "dangerous" and "fear mongering." The messenger is made to be the issue to divert attention from the message.

Attempts to bully and intimidate people into silence sometimes work. Individuals and public interest groups shrink from controversy and refuse to challenge polluters they fear and politicians they favor. When this happens, no one has the community's back.

Island County Board of Health

When the Navy first began testing the community's water for PFASs, it was doing so in accordance with a Sampling and Analysis Plan shared with the County Health Department. The plan was *not* shared with the people whose water was being sampled. When a public records request for the plan was denied, this writer criticized the Navy and Board of Health for not revealing which PFASs were being sampled or the detection limits being used. ¹⁶ Health Board member Grethe Cammermeyer, responded by accusing this writer of being an alarmist without all the facts. ¹⁷

As it turns out, the Navy did not sample for all the PFASs known to be in the water and did use detection limits that would allow some PFASs to go undetected. The Board of Health was unaware of the fact that Coupeville had already detected PFHxS and other PFASs in public drinking water. ¹⁸

The fact that our Island County has not asked for the retesting of the well at Rhododendron Park, not conducted any tests on its own, nor to independently identify the extent of the Navy's spreading plume of contamination, speaks to a bigger political problem.

Whidbey General Hospital

Whidbey General Hospital has known or should have know that it was providing PFAS contaminated water to its unknowing patients, employees and visitors. On April 10, 2017, this writer suggested that the hospital install a proper filtration system to keep PFASs out of its water or at least inform them of the PFASs present. The next day, Coupeville Mayor, Molly Hughes and hospital CEO, Geri Forbes exchanged emails proposing wording to be used in rejecting the request.

When Forbes referenced the hospital's icemachine and drinking water filtration, Mayor Hughes wrote,

"I would leave out the part about your filter. Unless you know for a fact that you use activated charcoal and your filter system is large enough to treat the hospital's water and the media is changed out often enough, I think it's risky to imply you are treating your water for these compounds. Someone will check. Richard has already threatened to test it on the sly" 19

In a September 19th Whidbey News Times article, that hospital announced that a one-time and not-to-be-repeated test found the hospital's water to be "just fine." George Senerth, executive director of facilities, stated, "The water coming from the town is fine." CEO Geri Forbes even stated she would drink the water. Greta Cammermeyer, who sits on the hospital and health boards accused this writer of being an "alarmist" who was "blowing hot air."

It is likely that the hospital's water is still contaminated with PFASs because it does not have the kind of filtration system that Coupeville's Mayor recognized as necessary. Also, because of the hospitals flawed one-time test of its own water used different laboratories with different detection limits to compare before and after test results of its water. ²⁰

Coupeville's Schools

If PFASs have not been removed from Coupeville's water, and the schools in Coupeville do not have the kind of filtration system the Mayor described in her email to Whidbey General Hospital CEO Geri Forbes, those who drink the school's water are being exposed to PFASs.

Solutions Awaiting Implementation

No one has claimed that every exposure to PFASs will evidence health harms – no more than everyone who smokes will get cancer. But there are risks associated with exposures and common sense dictates exposures should be eliminated.

Removing the PFASs from the aquifer will be costly and extremely difficult to do. The good news is that they can be kept out of drinking water. Contaminated wells can be filtered or relocated. Vulnerable wells, like Coupeville's Fort Casey wells, can be protected.²¹

Possible solutions are being discussed, but behind closed doors and without the participation of all legitimate 'stakeholders.' Such discussions can lead to polluter-friendly 'solutions' that allow for contaminants to remain at so-called "acceptable" levels. Costs that should be borne by the Navy can get shifted to taxpayers.

Nothing in the law exempts the Navy from its responsibility to address the contamination it caused. The Defense Department has known for over 30 years that PFAS containing firefighting foam can endanger both human health and the environment.²²

The Town has asked the County about purchasing land for a new well, and inquired about possible state funding for a filtration system, a new well, and extending water supply lines. There have been no *public* demands made of the Navy and no *public* commitment by the Navy to pay for anything specific.

If the citizens of Whidbey Island don't want to the legacy of pollution now in the making, they can learn from the experiences of communities around the country. They must participate in decisions that are currently being made behind closed doors, primarily by those who caused the problem and those who have downplayed or denied it.

All stakeholders, including pollution victims, schools, and the hospital need to be at the table to discuss solutions - and they shouldn't wait to be invited.

PFASs found in Drinking Water Samples taken by the Navy, Town of Coupeville, and/or Citizens

Perfluorooctanoic Acid (PFOA)
Perfluoroheptanoic Acid (PFHpA)
Perfluorohexanesulfonic Acid (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorobutanesulfonic Acid (PFBS)
Perfluoroctane Sulfonate (PFOS)

This list may not include PFASs found in the Navy's most recent testing of public and private wells. Coupeville has received its results, which should be made public.

ABOUT THIS WRITER: Rick Abraham has worked on toxic pollution issues as a public interest advocate for 25 years for state and national organizations focusing on toxic pollution. They include the National Toxics Campaign (as Southern Regional Organizer); Texas Center for Policy Studies (Director of Toxic Waste Project); Director of the statewide environmental organization Texans United Education Fund; as consultant for a number of law firms representing polluted communities in a number of states; and the Ponca Indian Tribe of Oklahoma, Also as a consultant for various international unions concerned about toxic contamination of their employees and their communities. This work included investigating PFAS contamination in New Jersey, Virginia, North Carolina, Mississippi, and New York State. It involved interfacing taking with regulatory officials, environmental testing and researching internal company documentation of PFASrelated health impacts. This report has been prepared without compensation and offered as a contribution to the community. richardcabraham@gmail.com

¹ According to the Agency for Toxic Substances and Disease Registry states, "The ability of these compounds to be in the body, also known as body burden, increases concerns about the possible effects on human health." Some, but not all studies in humans have shown that certain PFAS may: affect the developing fetus and child, including possible changes in growth, learning, and behavior; decrease fertility and interfere with the body's natural hormones; increase cholesterol; affect the immune system, increase cancer risk.

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² October 11, 2016 Analytical Report for Service Request No: K1611172 (OLF)

³ The Method Detection Limit Detection Limit for PFOA in the Navy's sampling of OLF drinking water was 3 ppt. For the Navy's community drinking water investigation, the Detection Limit for PFOA was about 9 ppt.; The Detection Limit for PFOS in the Navy's drinking water investigation on its OLF property was 10 ppt.; For the Navy's community investigation, the Detection Limit for PFOS was about 15 ppt.; The Detection Limit for PFBS in the Navy's OLF drinking water investigation was 10 ppt. For the Navy's community investigation, it was about 44 ppt.

⁴ PFOS found in OLF monitoring wells MW05M, MW14M, MW03D and MW07M at (3.26, .898, .914, and .844 ppt respectively. These were below the Detection Limit of between 14 and 16 ppt used in the Navy's PFOS analysis of community water. (Sources: Table 1 Navy Results of PFOS, PFOA and PFBS in Groundwater, Outlying Landing Field Coupeville; Navy OLF Site Inspection Poster/Fact Sheet); PFBS was found in OLF monitoring wells MW05S and MW09M at 11.2 and 12.9 ppt respectively. The Detection Limit for PFBS in the Navy's community investigation was between 44 and 50 ppt (Sources: Table 1 Navy Results of PFOS, PFOA and PFBS in Groundwater, Outlying Landing Field Coupeville; Coupeville Validated Form 1/LCMS Organics Analysis Data Sheets)

⁵ Public Records Request to Island County Board of Health from R. Abraham of 10/31/16 and response of 11/23/16; R. Abraham public records request of 2/3/2017 for Final Sampling and Analysis Plan; The Island County Health Dept. described by the Navy as a "partner," participated in the development of the plan to test wells in the community and helped with the Navy's messaging to the public.

⁶ Presentation, PFAS Testing at Pease, Highly Fluorinated Compounds – Social and Scientific Discovery Northeastern University, June 14, 2017, Andrea Amico, AlaynaDavis, Michelle Dalton; State of New Hampshire Department of Health and Human Services Division of Public Health Services, Pease PFC Blood Testing Program: April 2015 – October 2015; After PFCs were discovered in water leaking from a former Air Force Base in New Hampshire, almost 1600 potentially exposed people had their blood tested (366 children, 31 adolescents, 1181 adults). Elevated levels of PFOA, PFOS and PFHxS were found compared to national averages, with "significantly" higher concentrations found in children aged 11 years and younger. PFHxS was highest PFAS found in the blood samples.

⁷ Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood, Journal of

Immunotoxicology Volume 10 Issue 4, Pages: 373-379 Published: OCT-DEC 2013

⁸ Exposure to Polyfluoroalkyl Chemicals and Attention Deficit/Hyperactivity Disorder in U.S. Children 12–15 Years of Age, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC300

⁹ The Safe Drinking Water Act says that a nation-wide standard cannot be established until the following three conditions are met: the EPA must find that a chemical has adverse health effects, that it occurs frequently at levels of public concern, and that there is a meaningful opportunity for health risk reduction for people served by public water systems. This means that a chemical could be suspected – or even proven – to have adverse health effects, but if public water systems across the country lack the capacity to remedy the threat, a national standard can't be established.

¹⁰ Environmental Working Group https://www.ewg.org/tapwater/state-of-americandrinking-water.php#.WhuVgq2ZPp4

¹² Colorado Department of Public Health and the Environment included PFHpA along with PFOA and PFOS in its combined health advisory guidance level of 70 ppt, https://www.colorado.gov/pacific/cdphe/PFCs/about/u nregulated-substances; Connecticut's "Action Level" above which the state can take action, is 70 ppt for the *sum* of PFOS, PFOA, PFNAS, and PFHpA. (EPA only considers the sum of PFOS and PFOS)

13 6/5/17 Email from Molly Hughes to G. Weed

¹⁴ 1/4/17 Published comments by Mayor Molly Hughes in response to Letter to the Editor by Marion Atwood; When referring to flyer advertising a community meeting the Coupeville Community Alliance, the Mayor stated, "Contaminants in Your Water is a headline meant to cause panic."

¹⁵ Consumer Confidence Report (CCR) Rule, 63 FR 44511, August 19, 1998, Vol. 63, No. 160

 16 3/3/17 Whidbey News Times Letter to the Editor from R. Abraham

¹⁷ 3/17/17 Whidbey News Times Letter to the Editor from Gretha Cammermeyer

¹⁸ County Hydrologist Doug Kelly, who was the Health Departments liaison with the Navy stated on August 28, 2017 that he was unaware that the Town of Coupeville had tested for more than three PFACs.

 $^{\scriptscriptstyle{19}}\,4/11/17$ Email from Mayor Molly Hughes to CEO Geri Forbes

The hospital, which doesn't have a PFAS filtration system, released the results of its one time "pre-filter" and "post-filter" testing. Different laboratories with different detection limits were used in the comparison tests. The PFHxS found in the "pre-filter" sample would not have been detected in the "post-filter" analysis

 21 8/21/17 Meeting with Island County Health's Hydrologist Doug Kelly agreed that the Fort Casey wells are at risk – and surprised they were not already contaminated.

²² Records: Military knew of foam dangers in 2001 By Kyle Bagenstose, staff writer Jul 15, 2017, http://www.theintell.com/tncms/asset/editorial/e8e02414-6744-11e7-a404-ff481000f5a8Records a8/

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^{*} Note: Schedule durations are preliminary, conceptual, and approximate based on project schedule acceleration strategies employed on similar past projects. Potential exists for certain tasks to require more or less time than indicated.

Additionally a variety of options exist for the overall schedule to be further compressed/accelerated for even more rapid overall completion.





